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ABSTRACT

This report examines the College Discovery and Development Program, which seeks (1) to identify underachieving disadvantaged high school students with college potential, (2) to increase their academic motivation, (3) to improve their scholastic achievement, (4) to develop their acceptance of college study as a realistic expectation for themselves, and (5) to facilitate their college success. The report, which includes specialized topical essays, details the characteristics of the third year group of participants at intake, their aptitude and previous achievement, the effects of the summer program, achievement and attendance, guidance services, college consultants, and graduation and college acceptance. See ED 011 683 and UD 009 148 for first year and second year reports, respectively, of the Longitudinal Study. (EM)

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DIVISION OF TEACHER EDUCATION
Of The
CITY UNIVERSITY OF NEW YORK

DISCOVERING AND DEVELOPING THE COLLEGE POTENTIAL

OF

DISADVANTAGED HIGH SCHOOL YOUTH

A Report of the Third Year of a Longitudinal Study

on

THE COLLEGE DISCOVERY AND DEVELOPMENT PROGRAM

by

Lawrence Brody

Beatrice Harris

Genaro Lachica

March, 1969

Report No. 69-1

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A REPORT OF THE OFFICE OF RESEARCH AND EVALUATION

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September 18, 1969

Dr. Lawrence Brody
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Dear Dr. Brody:

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(Mrs.) Jean Barabas
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jb/

FOREWORD

This volume is the third in a series of reports of a longitudinal study of the College Discovery and Development Program, Prong II. The first year of this Program was reported in January 1967 by Daniel Tanner and Genaro Lachica, Discovering and Developing the College Potential of Disadvantaged High School Youth. The second year was reported in March 1968 by Lawrence Brody, Beatrice Harris and Genaro Lachica under the same title.

ACKNOWLEDGMENTS

The research staff acknowledges its debt of gratitude to Chancellor Albert H. Bowker, Vice Chancellor Robert Birnbaum, Dean Benjamin Rosner, Dean Lester A. Brailey, Dr. Irving L. Slade and, Professor Leonard Kreisman for their wholehearted encouragement and support of the College Discovery and Development Program.

Dr. Bernard Donovan, Superintendent of Schools, and Dr. Nathan Brown, Executive Deputy Superintendent of Schools, have maintained their support and encouragement of the Program despite the phenomenal pressures upon them in this year of urban crisis. Dr. Seelig Lester, Deputy Superintendent in Charge of Instruction; Mr. Maurice Hopkins Assistant Superintendent in Charge of State and Federally Assisted Programs and Mr. Gene M. Satin of that office have contributed advice and hard work in facilitating solution of the perennial problems of so complex a program. Assistant Superintendent J. Wayne Wrightstone, Assistant Superintendent in Charge of Educational Research of the Board of Education, Dr. Samuel D. McClelland, Acting Director of Office of Educational Research for the Board of Education; Mrs. Daisy Shaw and Mrs. Cecilia Sarasohn, Director and Assistant Director, respectively, of the Bureau of Educational and Vocational Guidance; and Mr. Harold Zuckerman, Coordinator of College Guidance and Scholarships for the Board of Education have given invaluable counsel and leadership. Miss Florence Myers, Coordinator of the College Discovery and Development Program for the Board of Education has given of her talents, her insights, and her heart above and beyond any possible professional claim: we thank her.

Dr. Carl Steinhoff, Dr. Samuel Malkin, Dr. Genaro Marin and Miss Mildred Kaye of the College Discovery and Development staff were most helpful in handling many important administrative details. Miss Simone I. Arons, Miss Sallie Bregman, Mr. Francis Etuk, and Miss Sheila Sperber, Research Assistants, indefatigably carried on an infinite number and variety of daily program tasks. Special thank yous to Miss Phyllis Siegel, Research Assistant, who devoted much energy to assisting in administrative detail as well as data processing. Miss Ester Katz, Miss Patricia Manning, Miss Helen Mur, Mr. Antonio Rodriguez, Miss Alice Scharf and Miss Judy Weiss helped diligently in gathering and processing data. We are very grateful to Miss Argia Caputo, Mrs. Selma Miller and Miss Paulette Satherswaite, project secretaries for their devotion and competent assistance in many facets of the Program. The patience and diligence of Miss Satherswaite in her typing of this report is much appreciated.

Special thanks are owed the College Curriculum Consultants who have stimulated and helped develop a number of means for making productive the innate potential of our students. Professor Florence B. Freedman has been gracious, energetic and effective in her difficult role as Coordinator of Consultants and we thank her for her aid.

We are deeply indebted to the principals, their administrative assistants, the school coordinators, guidance counselors and supervisors, chairmen (heads of departments), class teachers and secretaries of the five host high schools for their active involvement. Their devotion to the students, hard work and concern for the best functioning of the Program can never be repaid.

We wish also to express our gratitude to the Advisory Policy Committee which has been important to the active participation of students, parents and community.

Finally, we are grateful to the State of New York, the United States Office of Economic Opportunity, the United States Office of Education, and the Human Resources Administration of the City of New York for their financial support.

Lawrence Brody, Director

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CHAPTER I

INTRODUCTION

The College Discovery and Development Program, planned in 1964-65 and initiated in September, 1965, completed three years of consistent implementation in June 1968. This report continues to evaluate the educational progress of students who have been admitted to the College Discovery and Development Program. During this third year, 1967-68, there were three CDD classes in the Program: CDD I, admitted in September 1965; CDD II, admitted in September 1966; and, CDD III, admitted in September 1967.

Program Purposes

The purposes of the College Discovery and Development Program were basically unmodified through its first three years. These purposes have been discussed in the first two annual reports[1] but are summarized here for the reader's convenience.

> The major objective of the Program is to discover and develop the college potential of disadvantaged youth who, without the benefit of intensive and long-range educational support of a special nature, would be unlikely to enter college.
>
> The specific objectives of the Program are: (1) identify disadvantaged youth who, at the end of the ninth grade, have heretofore been "undiscovered" in their potential for college, (2) to improve their motivation for school work, (3) to improve their levels of achievement in school, (4) to develop their expectations for college entrance, and (5) to improve their chances for success in college.

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[1] Daniel Tanner and Genaro Lachica, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the First Year of a Longitudinal Study on the College Discovery and Development Program, Office of Research and Evaluation, City University of New York, January, 1967, p.3.
L.Brody, B. Harris, and G. Lachica, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the Second Year of a Longitudinal Study on the College Discovery and Development Program, Office of Research and Evaluation, City University of New York, March, 1968, p. 1.

The Populations Studied

The basic criteria for selection of students have remained unchanged since the Program's inception. However, there were again several kinds of changes in population during this third year. A number of students left each of the three classes in CDD for a variety of reasons. These included mobility outside New York City, voluntary withdrawal of students remaining in New York (for many different reasons) and discharge from the Program by school authorities. The reasons for such discharges included continued truancy, successive failures despite intensive counselling and remedial efforts, or continued serious disciplinary problems. No new students were added to any of the three CDD classes to replace these attrition losses.

The second kind of population change during the third year of the Program involved addition of a third class (CDD III), which entered the tenth grade in September 1967. This class was considerably smaller than CDD I and CDD II had been upon enrollment. This reduction from 550 to approximately 300 invited was an administrative response of CDD to notice of limitation of funding to prior total levels by one of the funding agencies.

Selection Criteria

The criteria for selection of CDD III were closely similar to those used in the two previous classes. These criteria have been described in previous reports.[2] In summary these criteria included:

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[2] Daniel Tanner and Genaro Lachica, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the First Year of a Longitudinal Study on The College Discovery and Development Program, Office of Research and Evaluation, City University of New York, January 1967, pp. 4-7.
L. Brody, B. Harris, and G. Lachica, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the Second Year of a Longitudinal Study on the College Discovery and Development Program, Office of Research and Evaluation, City University of New York, March, 1968, p. 2.

1. Evidence of socio-economic disadvantage, viz:
    a. Income.
    b. Life Chances Scale.
2. High potential vs. low academic achievement:
   Priority in selection was given to students whose records showed greatest discrepancy between apparent potential and ninth grade performance, as seen in:
    a. High academic performance early in student's history with marked decline in later grades.
    b. Ninth grade scores on Metropolitan Reading test above students' actual grade level combined with low academic grades.
    c. High scores on other standardized tests combined with low academic grades.
    d. Unevenness of academic performance: i.e. marked discrepancies as between performances in various school subjects.
3. Evidence other than standardized test scores:
    a. Leadership, special aptitudes, creativity and personality factors.
    b. Students autobiographical statements.
    c. Desire to enter program.
    d. School attendance record.
    e. Absence of severe physical and emotional disability.
    f. Age within two years of usual ninth grade placement.
4. Sex Ratio:
   Approximately 60% boys to 40% girls.

In all other respects the selection process for CDD III followed that utilized for CDD II. It should be noted that the same modified

Life Chances Scale was applied to CDD II and CDD III.[3] The economic criteria for CDD III were the same as those for CDD II selection, summarized here for the reader's convenience:

PERMISSIBLE MAXIMUM WEEKLY FAMILY INCOME[4]

Non-Farm Families

TABLE A

No. persons in family	Dollars
1	$1,500
2	2,000
3	2,500
4	3,000
5	3,500
6	4,000
7	4,500
8	5,000
9	5,500
10	6,000

Above 10 - add $500 for each additional member

TABLE B

No. persons in family	Dollars
1	$2,000
2	3,000
3	3,500
4	4,000
5	4,500
6	5,000
7	5,500
8	6,000
9	6,500
10	7,000

Above 10 - add $500 for each additional member

Note: 90% of those selected must meet Table A criteria; up to 10% may be selected under Table B criteria.

In summary, the major changes in student personnel during this third Program year involved addition of a third class in September 1967 and attrition losses from all three classes through the academic year.

Staff Changes

There were a considerable number of staff changes in the College Discovery and Development Program during this third year, 1967-68. Dr. Benjamin Rosner in his new capacity as University Dean of Teacher Education in September 1967 continued the active support of this Program formerly provided by Dean Harry A. Rivlin and Acting Dean

---

[3] L. Brody, B. Harris, and G. Lachica, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the Second Year of a Longitudinal Study on the College Discovery and Development Program, Office of Research and Evaluation, City University of New York, March, 1968, pp. 3-4.

[4] U.S. OEO, Guidelines, Upward Bound, OEO, 1967-68, p. 5.

Harold H. Abelson. During this 1967-68 academic year, Professor Albert J. Harris retired; although his day-to-day support and direction became unavailable, Dr. Harris has continued to provide encouragement and to help maintain continuity of direction through consultation. Professor Lawrence Brody was appointed Acting Director of the Office of Research and Evaluation within which this Program continues as in previous years. The additional responsibilities assigned Dr. Brody necessitated the appointment of Dr. Samuel Malkin as Assistant Director of the College Discovery and Development Program to enable continued coordination at satisfactory levels. Miss Mildred Kaye was newly appointed as Assistant to the Director.

Methodology

Problems

Aspects of the Program to be dealt with in the coming chapters are as follows:

1. Differences between students admitted to various college and other post high school programs.
2. The description of the entering CDD population in terms of socio-economic characteristics; aptitude and prior achievement.
3. Comparison of the new CDD class to the two prior entering CDD populations.
4. Comparison of the CDD groups to the selected Control groups in terms of aptitude and achievement.
5. The comparability in aptitude and prior achievement of students selected for the third CDD class among Centers.
6. Academic performance of students in CDD I, CDD II, and CDD III during the 1967-68 academic year.
7. Differences among Centers in academic performance of the three CDD classes.
8. Academic progress of CDD I students through six terms in the Program.

9. Academic progress of CDD II students through four terms in the Program.
10. Academic progress of Control I and Control II students through six and four terms of high school.
11. The effect of the Upward Bound experience on academic achievement.
12. Study of attrition rate and the factors influencing students to drop out of the Program.

Subjects.

For the period covered by this report CDD I students were in twelfth grade of high school. The number of CDD I students remaining for their third year was 454. The Control I group, which included those students sampled from the entire academic population in each Center who were still in the academic track, consisted of 460 students.

CDD II, who were then in their second year of the Program and in the eleventh grade of high school remained 482 in number. The comparison group, Control II, had 379 students remaining. This comparison group contained no Control students from Center III, therefore the large discrepancy in number of students.

The entering group of College Discovery Students, CDD III, consisted of 291 students. For this third group, the total number of students admitted to the Program was limited to 60 per Center. This was due to a decrease in the amount of funds available to maintain the Program. There were 340 subjects in the Control III group.

Instruments

The research instruments used in the third year of this longitudinal study were essentially the same as in the first two years. The Personal Information Form and the Nomination Form sent in by the nominating schools and which served as the screening tools provided the investigators with socio-economic and previous academic achievement data on CDD III students. Three tests of the Differential Aptitude Tests and two subtests of the Stanford Achievement Test were administered to both CDD III and Control III students as indicators of aptitude and achievement in verbal and numerical areas.

Final fall and spring grades as well as Regents Examination scores were used as indices of academic performance for the year covered.

Information on admission of CDD I and Control I graduates provided by the City University and the Development Centers was used as additional evidence of academic success on the part of the students and the success of CDD Program in its goal to identify disadvantaged youngsters with college potential and to enhance their chances for college admission.

Statistical Treatment of Data

Quantitative socio-economic data and prior achievement data for the CDD III group was summarized using means and standard deviations, indicating the average economic characteristics and average prior achievement as well as the variability of CDD students in each Center and as a group. The analysis of variance was used to make inter-Center comparisons, to note whether the entering population of CDD students differed significantly from Center to Center in terms of socio-economic background and prior achievement.

Qualitative variables were examined in terms of frequencies and percentages.

Comparisons were made between entering CDD populations on various socio-economic and achievement variables. The analysis of variance was used to analyze similarities and differences between the three classes when the data was quantitative in nature. The chi-square test was used to see whether the differences between the three entering groups went beyond chance expectation.

The Control and CDD groups were compared within each Center on aptitude and achievement measures by use of the t test, which determines whether the mean scores of the two groups on any measure differ significantly. Inter-Center comparisons of achievement and attendance for each of the three CDD groups were made by analysis of variance.

The repeated measures analysis of variance was used to examine trends in academic performance for CDD groups, I and II, and corresponding control groups over six and four terms respectively.

CHAPTER II

CHARACTERISTICS OF THE POPULATION

A. CDD I

In the Fall of 1967 students in the first class of the College Discovery and Development Program entered their last year of high school. In the Second Annual Report on the College Discovery and Development Program,[1] it was noted that only 499 students returned for their eleventh year. For their twelfth year, only 454 students came back.[2] Table 1 indicates the distribution of males and females for all Centers.

TABLE 1

College Discovery Enrollment by Centers

for the Twelfth Year - CDD I

Center	Male		Female		Both Sexes
	N	%	N	%	
I	60	59.4	41	40.6	101
II	72	69.9	31	30.1	103
III	48	54.5	40	45.5	88
IV	39	50.0	39	50.0	78
V	50	59.5	34	40.5	84
All Centers	269	59.3	185	40.7	454

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[1] L. Brody, B. Harris, G. Lachica, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the Second Year of a Longitudinal Study on the College Discovery and Development Program, Office of Research and Evaluation, City University of New York, March, 1968.

[2] The various reasons for attrition will be discussed in detail in a later chapter.

Table 2 presents the ethnic distribution of CDD I in its senior year of high school. Approximately sixty-five per cent of the enrollment consisted of Negro and Puerto Rican students. This approximated the proportion found in the first two years indicating that attrition rate was similar for all ethnic groups.

TABLE 2

Ethnic Distribution - CDD I

Ethnic group	N	%
Negro	184	40.5
Puerto Rican	110	24.2
Other	160	35.3
All groups	454	100.0

B. CDD II

CDD II students were in their eleventh year of high school. Of the 511 students who constituted the entering population, only 482 students were left to begin the second year of the Program.

The distribution of CDD II students by sex throughout the Centers is shown in Table 3. The proportion of males and females in the Program approximated that of the previous year.

TABLE 3

College Discovery Enrollment by Center
for the Eleventh Year - CDD II

Center	Male		Female		Both Sexes
	N	%	N	%	
I	54	63.5	31	36.5	85
II	62	54.9	51	45.1	113
III	54	57.4	40	42.6	94
IV	49	53.3	43	46.7	92
V	55	56.1	43	43.9	98
All Centers	274	56.8	208	43.2	482

The ethnic distribution of those students remaining for the second year is given in Table 4. Negro and Puerto Rican students accounted for 48 per cent of the total population. There was no significant deviation from the previous year in ethnic distribution.

TABLE 4

Ethnic Distribution - CDD II

Ethnic group	N	%
Negro	230	47.7
Puerto Rican	98	20.3
Other	154	32.0
All groups	482	100.0

C. CDD III

A third group of students was admitted in the school year 1967-68 to start their first year in the College Discovery and Development Program. This group will first be described in terms of socio-economic and biographical information. Inter-Center comparisons will be made on certain quantitative variables. A final section will be devoted to the comparison of CDD III with the two previous populations at intake.

Sex Distribution

The breakdown by Center and by sex for CDD III is presented in Table 5. The small number of students at intake for the third year was due to a decrease in funds made available from sources tapped in the past two years.

TABLE 5

College Discovery Enrollment by Center

for the Tenth Year - CDD III

Center	Male		Female		Both sexes
	N	%	N	%	
I	37	66.1	19	33.9	56
II	31	51.7	29	48.3	60
III	28	47.5	31	52.5	59
IV	32	56.1	25	43.9	57
V	34	57.6	25	42.4	59
All Centers	162	55.7	129	44.3	291

Ethnic Distribution

The ethnic distribution across all Centers is displayed in Table 6. For CDD III, approximately 75 per cent of the students were Puerto Rican and Negro.

TABLE 6

Ethnic Distribution - CDD III

Ethnic group	N	%
Negro	151	53.5
Puerto Rican	62	22.0
Other	69	24.5
All groups	282	100.0

Age in Months

The mean age for the entire CDD III population was 185.05 months (15.4 years, Table 7). Center I and Center II had slightly older students than the other three Centers. This was shown by the analysis of variance which yielded an F value significant at the .01 level (Table 27, p. 26).[3]

TABLE 7

Age in Months - CDD III

Center	N	Mean	S.D.
I	55	187.87	7.97
II	60	184.13	7.85
III	59	185.75	6.39
IV	58	182.98	6.51
V	60	184.70	5.81
All centers	292	185.05	7.09

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[3] Table 27 contains F values for the analysis of variance to compare Centers on quantitative variables.

Family Structure

In the CDD III group, 57 per cent of the students reported their parents as alive and living together (Table 8), yet only 55 per cent of the students indicated that they were living with their parents (Table 9).

TABLE 8

Both Parents Alive and Living Together

CDD III

Center	Yes		No		No Information	
	N	%	N	%	N	%
I	28	50.0	25	44.6	3	5.4
II	27	45.0	30	50.0	3	5.0
III	37	62.7	21	35.6	1	1.7
IV	37	64.9	14	24.6	6	10.5
V	37	62.7	20	33.9	2	3.4
All centers	166	57.0	110	37.8	15	5.2

TABLE 9

Students Living With Parents

CDD III

Center	Yes		No		No Information	
	N	%	N	%	N	%
I	27	48.2	28	50.0	1	1.8
II	25	41.7	35	58.3	0	0.0
III	37	62.7	22	37.3	0	0.0
IV	35	61.4	20	35.1	2	3.5
V	37	62.7	21	35.6	1	1.7
All centers	161	55.3	126	43.3	4	1.4

Table 10 shows the heads of households for cases in which the parents are not living together. The percentages indicated are computed on the basis of all the subjects in CDD III for each Center. It is seen that in most cases in which the family was not intact, the mother was the head of the household. There was a notably higher percentage of students in Center V who were living in institutions. It is also interesting to note that there was a higher percentage of students living with mother and stepfather than with father and stepmother.

TABLE 10

Head of Household Where Parents are not Living Together*

CDD III

Center	Mother & stepfather		Father & stepmother		Mother		Father		Guardian		Foster parents		Institution	
	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*
I	1	1.8	2	3.6	20	35.6	0	0.0	2	3.6	0	0.0	0	5.4
II	6	10.0	11	1.7	18	30.0	3	5.0	5	8.3	2	3.3	0	0.0
III	1	1.7	0	0.0	17	28.8	0	0.0	3	5.1	2	0.0	1	1.7
IV	4	7.0	0	0.0	9	15.8	0	0.0	3	5.3	1	1.8	0	0.0
V	0	0.0	0	0.0	12	20.3	0	0.0	2	3.4	1	1.7	6	10.2
All centers	12	4.1	3	1.0	76	26.1	3	1.0	15	5.2	4	1.4	10	3.4

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*Percentages of CDD III total population

The number and per cent of students reporting their mother and father as living or deceased are indicated in Tables 11 and 12. Only 4.5 per cent of the students reported their mothers as deceased whereas 9.3 per cent reported their fathers as deceased.

TABLE 11

Students Reporting Mothers Living or Deceased

CDD III

Center	Mother Living		Mother Deceased		No Information	
	N	%	N	%	N	%
I	51	91.1	2	3.6	3	5.3
II	51	85.0	6	10.0	3	5.0
III	57	96.6	1	1.7	1	1.7
IV	50	87.7	1	1.8	6	10.5
V	54	91.5	3	5.1	2	3.4
All Centers	263	90.3	13	4.5	15	5.2

TABLE 12

Students Reporting Fathers Living or Deceased

CDD III

Center	Father Living		Father Deceased		No Information	
	N	%	N	%	N	%
I	47	83.9	6	10.7	3	5.4
II	53	88.3	4	6.7	3	5.0
III	52	88.1	6	10.2	1	1.7
IV	48	84.2	3	5.3	6	10.5
V	49	83.1	8	13.5	2	3.4
All centers	249	85.5	27	9.3	15	5.2

Living Conditions

Most of the students lived in 5-room apartments as seen in Table 13. The mean number of rooms varied from 4.81 in Center III to 5.39 in Center IV indicating a non-significant variability in housing conditions among Centers.

TABLE 13

Number of Rooms per Household - CDD III

Center	N	Mean	S.D.
I	52	4.85	1.13
II	53	4.85	0.88
III	57	4.81	1.04
IV	33	5.39	1.77
V	37	5.35	1.30
All centers	232	5.00	1.19

On the average, five to six people shared the living space per household (Table 14). There were no significant differences among Centers in this variable.

TABLE 14

Number of Persons in Household - CDD III

Center	N	Mean	S.D.
I	54	5.61	1.97
II	58	5.69	2.23
III	58	5.29	2.04
IV	52	5.48	1.79
V	52	5.73	1.86
All centers	274	5.56	2.01

Economic Data

Even though there was little variation in the number of rooms per household from Center to Center there were significant differences in the monthly rent paid. The monthly rent ranged from $68.69 for Center III to $111.04 for Center IV (Table 15).

TABLE 15

Monthly Rent - CDD III

Center	N	Mean	S.D.
I	48	85.23	28.90
II	57	82.14	34.10
III	54	68.69	23.48
IV	49	111.04	41.18
V	47	91.72	26.07
All centers	255	87.19	34.23

The reported weekly income for each Center ranged from $89.87 for Center III to $113.28 for Center IV (Table 16). Inspection of both income and rent data revealed that families in Centers IV and V had the highest incomes and paid highest monthly rents, indicative of the higher economic status of these families as compared to those in Centers I, II, and III. The variability in income from Center to Center was significant.

Dividing the mean weekly income for all Centers by the average number of persons in household for all Centers yielded an average weekly income per person of $17.79, which is far below the Office of Economic Opportunity's criterion for poverty.

TABLE 16

Total Weekly Income - CDD III

Center	N	Mean	S.D.
I	54	92.20	33.24
II	56	95.16	36.01
III	55	89.87	31.33
IV	54	113.28	34.64
V	49	105.06	27.08
All centers	268	98.94	33.76

As indicated in Table 17, 16.5 per cent of the families of CDD III students relied on Welfare and Aid-to-Dependent Children as their sources of supplementary income. Approximately 60 per cent of the subjects reported no income in addition to that earned by the working members of the immediate family.

It should be noted that the mean total weekly income of $98.94 supported 5.56 persons (mean number of persons per household) with mean monthly rent obligation of $87.19. Viewed against this fiscal background, carfare, lunches and school expenses of CDD students became a very important investment.

TABLE 17

Sources of Supplementary Income - CDD III

Center	Welfare		ADC		Pension		Part-Time Employment		Family Members		Other		Any Two		None Stated	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
I	8	14.3	4	7.1	3	5.4	0	0.0	5	8.9	1	1.8	5	8.9	30	53.6
II	8	13.4	6	10.0	3	5.0	2	3.3	6	10.0	3	5.0	5	8.3	27	45.0
III	5	8.4	3	5.1	2	3.4	0	0.0	2	3.4	1	1.7	3	5.1	43	72.9
IV	7	12.3	4	7.0	4	7.0	5	8.8	0	0.0	2	3.5	3	5.3	32	56.1
V	2	3.4	1	1.7	1	1.7	0	0.0	3	5.1	2	3.4	7	11.8	43	72.9
All centers	30	10.3	18	6.2	13	4.5	7	2.4	16	5.5	9	3.1	23	7.9	175	60.1

Employment of Parents

Only one per cent of students' fathers were employed in professional occupations (Table 18). Most fathers were working in skilled and unskilled blue collar jobs. Less than one per cent of the mothers were working in jobs identified as professional (Table 19). Mothers who worked were also involved in skilled and unskilled jobs. Although 1.7 per cent of the students indicated their mothers' occupation, a high percentage of the 186 students who did not indicate their mothers occupations had mothers who were unemployed and who certainly could be classified as housewives.

TABLE 18

Father's Occupation - CDD III

Center	Professional		Non-Professional		No Information	
	N	%	N	%	N	%
I	0	0.0	29	51.8	27	48.2
II	2	3.3	37	61.7	21	35.0
III	0	0.0	37	62.7	22	37.3
IV	1	1.8	40	70.1	16	28.1
V	0	0.0	38	64.4	21	35.6
All centers	3	1.0	181	62.2	107	36.8

TABLE 19

Mother's Occupation - CDD III

Center	Professional		Non-Professional		Housewife		No Information	
	N	%	N	%	N	%	N	%
I	0	0.0	16	28.6	1	1.8	39	69.6
II	0	0.0	14	23.4	2	3.3	44	73.3
III	0	0.0	19	32.2	0	0.0	40	67.8
IV	2	3.5	30	52.6	2	3.5	23	40.4
V	0	0.0	19	32.2	0	0.0	40	67.8
All centers	2	0.7	98	33.7	5	1.7	186	63.9

Birthplace of Students and Parents

Approximately 75 per cent of the students were born in the northern United States or Canada (Table 20). Although 22 per cent of CDD III students were identified as Puerto Rican, only 9.3 per cent were born in Puerto Rico.

TABLE 20

Student's Birthplace

Center	U.S. North and Canada		U.S. South		Puerto Rico		Other		No Information	
	N	%	N	%	N	%	N	%	N	%
I	40	71.4	1	1.8	10	17.9	5	8.9	0	0.0
II	42	70.0	3	5.0	6	10.0	8	13.3	1	1.7
III	39	66.0	3	5.1	8	13.6	7	11.9	2	3.4
IV	44	77.1	6	10.5	1	1.8	5	8.8	1	1.8
V	53	89.8	1	1.7	2	3.4	3	5.1	0	0.0
All centers	218	74.9	14	4.8	27	9.3	28	9.6	4	1.4

Most of these students represented the first generation to be born in the northern United States. Tables 21 and 22 indicate that 46 per cent of the fathers and 49 per cent of the mothers were born in the Southern United States or Puerto Rico.

TABLE 21

Father's Birthplace

Center	U.S. North and Canada		U.S. South		Puerto Rico		Other		No Information	
	N	%	N	%	N	%	N	%	N	%
I	11	19.6	16	28.6	17	30.3	9	16.1	3	5.4
II	12	20.0	21	35.1	11	18.3	14	23.2	2	3.3
III	10	16.9	15	25.4	18	30.6	10	16.9	6	10.2
IV	22	38.5	21	36.9	2	3.5	11	19.3	1	1.8
V	41	69.4	9	15.3	4	6.8	2	3.4	3	5.4
All centers	96	33.0	82	28.1	52	17.9	46	15.8	15	5.2

TABLE 22

Mother's Birthplace

Center	U.S. North and Canada		U.S. South		Puerto Rico		Other		No Information	
	N	%	N	%	N	%	N	%	N	%
I	11	19.6	19	33.9	20	35.8	6	10.7	0	0.0
II	17	28.3	19	31.7	11	18.3	11	18.3	2	3.4
III	13	22.0	15	25.4	19	32.3	10	16.9	2	3.4
IV	18	31.6	24	42.1	2	3.5	13	22.8	0	0.0
V	40	67.8	9	15.3	4	6.8	5	8.5	1	1.6
All centers	99	34.0	86	29.6	56	19.2	45	15.5	5	1.7

Years of Schooling of Parents

The mothers of CDD III students had, on the average, almost ten years of schooling (Table 23). There were no significant differences among Centers as to the extent of mother's formal education.

TABLE 23

Years of Mother's Schooling - CDD III

Center	N	Mean	S.D.
I	55	9.71	3.22
II	55	9.87	2.95
III	57	9.26	3.78
IV	56	10.36	2.86
V	53	10.51	2.16
All centers	276	9.93	3.06

The fathers of CDD III students had on the average ten years of schooling which was the same number of years of schooling as the mothers (Table 24). There were no Center to Center differences. The data on educational attainment of parents reveal that most of them did not go beyond high school. Therefore, for these CDD youngsters, entrance into the Program already represented educational status equal to the average educational attainment of their parents.

TABLE 24

Years of Father's Schooling - CDD III

Center	N	Mean	S.D.
I	48	9.58	3.34
II	49	9.59	3.14
III	49	9.04	3.37
IV	49	10.27	3.39
V	49	10.71	2.02
All centers	244	9.84	3.13

Years at Present Address

On the average, CDD III students had resided at their present address approximately eight years (Table 25). Students in Center I had lived at their present address for the least number of years.

TABLE 25

Years at Present Address

Center	N	Mean	S.D.
I	56	5.07	4.58
II	59	7.49	12.12
III	59	8.42	5.78
IV	55	10.35	10.26
V	58	8.62	7.79
All centers	287	7.99	8.69

Adjusted Life Chance Scale Score

The Adjusted Life Chance Scale Score was analyzed as in previous years. The score is an index of deprivation. The scale, adapted from Dentler's original Life Chance Scale Score[4] was used in the selection of CDD students. The scale gives a score of one point for the following socio-economic variables: father and mother living together, father living, mother living, father born North, mother born North, mother high school graduate, father high school graduate, father professional, mother professional, less than four siblings. Two items are given scores of -1: overcrowding and welfare or aid to dependent children.

Overcrowding was measured by the ratio of the number of people to the number of rooms in the household. Where this ratio exceed unity the student was given a score of -1. Welfare or aid to dependent children was seen to be a negative factor because they were indicators of social or economic deprivation.

Table 26 gives the means and standard deviations for CDD III on the Adjusted Life Chance Scale.

TABLE 26

Adjusted Life Chance Scale Score

Center	N	Mean	S.D.
I	43	2.74	1.53
II	47	2.79	1.76
III	51	2.96	1.54
IV	31	3.35	1.52
V	51	4.53	1.58
All centers	218	3.21	1.71

Students in Centers IV and V obtained a significantly higher mean Adjusted Life Chance Score when compared to the other three Centers. These students, according to the scale, came from better socio-economic backgrounds.

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[4] R.A. Dentler and L.J. Monroe, "The family and Early Adolescent Conformity," Marriage and Family Living, 1961, 23, 241-47.

Summary

Table 27 presents the F values obtained in the analysis of variance of socio-economic variables used to compare the populations of the five Centers. Students from Center to Center, differed significantly in age, total weekly income, monthly rent, number of years at the present address, and the Adjusted Life Chance Scale score. No differences were observed in education of parents, number of rooms and number of persons in apartment.

In general, Centers IV and V were generally favored by the differences in these socio-economic factors. The families of students coming from these two Centers showed less mobility, higher income, better housing, and higher educational attainment.

TABLE 27

F Values Comparing Five Centers on
Socio-Economic Data for CDD III

Variable	F	P
Age in Months	4.003	<.01
Father's Schooling	2.182	>.05
Mother's Schooling	1.510	>.05
Total Weekly Income	4.783	<.01
Monthly Rent	12.253	<.01
Number of Rooms in Apartment	2.474	>.05
Number of Years at Present Address	2.821	<.05
Number of Persons in Apartment	0.433	>.05
Adjusted Life Chance Scale Score	44.658	<.01

Comparison of CDD I, CDD II, and CDD III on Socio-Economic Variables at Intake

The means and standard deviations for CDDI, CDD II, and CDD III on various quantitative socio-economic variables are presented in Table 28.

TABLE 28

Means and Standard Deviations of Socio-Economic Variables

for CDD I, CDD II and CDD III at Intake

Variable	CDD I		CDD II		CDD III	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Age in Months	183.83	10.44	183.50	15.60	185.05	7.09
Weekly Income	97.53	36.37	100.24	34.94	98.94	33.76
Monthly Rent	78.24	28.92	83.76	34.49	87.19	34.23
Number of Rooms in Apartment	5.17	1.55	4.59	4.74	5.19	3.19
Number of Persons in Apartment	5.24	1.97	5.51	2.39	5.56	2.01
Years at Present Address	6.51	5.35	6.96	5.07	7.99	8.69
Father's Schooling	9.60	3.14	9.88	3.08	9.84	3.13
Mother's Schooling	9.70	3.06	99.96	2.90	9.93	3.06
Adjusted Life Chance Scale Score	1.98	1.62	2.33	1.82	3.21	1.71

Analyses of variance to compare the three CDD populations revealed significant differences in monthly rent, and years at present address (Table 29).

Families of CDD III students paid on the average a higher monthly rent than CDD II or CDD I students. This difference should probably be attributed to a general rise in the cost of living as well as to increase in apartment size, since the average number of rooms in the apartments of families of CDD III students was higher than for the families of CDD II students. It should be noted that there was no corresponding increase in weekly income.

TABLE 29

F Values Comparing CDD I, CDD II, and CDD III on Socio-Economic Data

Variable	F	P
Age in Months	1.578	>.05
Weekly Income	0.728	>.05
Monthly Rent	7.378	<.01
Number of Rooms in Apartment	4.472	<.05
Number of Persons in Apartment	2.939	>.05
Years at Present Address	5.521	<.01
Father's Schooling	0.764	>.05
Mother's Sschooling	1.056	>.05

The number of years at the present address tended to become higher for each new CDD class. There appeared to be a decline in mobility among the families of the entering populations.

The apparent increase in mean Adjusted Life Chance Scale Score should not be interpreted as an improvement in socio-economic status but rather as a result of the addition of some items to the original scale.[5]

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[5] For comparison of Dentler-Monroe Life Chances Scale and Adjusted Life Chance Scale see p. 25.

CDD III was compared to CDD I and CDD II on some non-quantitative variables. The chi-square values obtained are reported in Table 30. Significant chi-square values, indicating deviation of observed from expected frequencies, were obtained for ethnic distribution, parents alive and living together, father living or deceased, mother's birthplace, and father's birthplace.

TABLE 30

Chi Square Values Comparing CDD I, CDD II, and CDD III on Socio-Economic Data

Variable	Chi-Square	P
Ethnic Distribution	10.249	<.05
Parents Alive and Living Together	10.454	<.05
Father Living or Deceased	32.802	<.01
Mother Living or Deceased	7.031	>.05
Father's Birthplace	6.678	>.05
Mother's Birthplace	64.572	<.01
Student's Birthplace	8.357	>.05

The relative proportion of Negroes in CDD classes has increased with each entering group. Therefore, there was a corresponding decrease in the proportion of other ethnic groups. The proportion of Puerto Rican students, however, has remained relatively constant (Table 31).

TABLE 31

Comparison of CDD I, CDD II, and CDD III
on Ethnic Distribution
All Centers

	Negro	Puerto Rican	Other	All Groups
CDD I	236* (255.8)**	128 (121.6)	194 (180.6)	558
CDD II	235 (232.4)	102 (110.5)	170 (164.1)	507
CDD III	145 (127.9)	63 (60.8)	71 (90.3)	279
All classes	616	293	435	1344

Chi-Square = 10.249, $P < .05$
*Observed frequency
**Expected frequency

Although there was a significant chi-square value for the number of parents alive and living together, there were no dramatic changes in the proportion of intact families, just an increase in the number of students not giving any information (Table 32).

TABLE 32

Comparison of CDD I, CDD II, and CDD III
on the Number of Parents Alive and Living Together
All Centers

	Parents Alive and Living Together	Parents Alive and Not Living Together	No Information	All Categories
CDD I	318 (324.6)	241 (236.2)	19 (17.2)	578
CDD II	291 (287.0)	213 (208.8)	7 (15.2)	511
CDD III	166 (163.4)	110 (118.9)	15 (8.6)	291
All classes	775	564	41	1380

Chi-Square = 10.454, P <.05

The significant chi-square value for the number of students reporting their fathers as living or deceased (Table 33) was attributed to the difference in proportion of students giving no information in CDD I and CDD II.

TABLE 33

Comparison of CDD I, CDD II, and CDD III
on Students Reporting Fathers Living or Deceased
All Centers

	Father Living	Father Deceased	No Information	All Categories
CDD I	468 (493.9)	53 (49.8)	57 (34.3)	578
CDD II	463 (437.5)	39 (44.1)	10 (30.4)	512
CDD III	249 (248.6)	27 (25.1)	15 (17.3)	291
All classes	1180	119	82	1381

Chi-Square = 32.802, P<.01

For the CDD III population, there was an increase in the proportion of mothers coming from the southern part of the United States as compared to CDD II (Table 34).

TABLE 34

Comparison of CDD I, CDD II and CDD III
on Mother's Birthplace

	U.S. North and Canada	U.S. South	Puerto Rico	Others	All Areas
CDD I	198 (202.0)	144 (135.7)	130 (99.0)	74 (82.2)	519
CDD II	209 (192.7)	110 (129.5)	89 (94.4)	87 (78.4)	495
CDD III	99 (111.3)	86 (74.8)	56 (54.6)	45 (45.3)	286
All classes	506	340	248	206	1300

Chi-Square = 64.571

(Additional statistical data on socio-economic characteristics are contained in Appendix A, p. 111).

CHAPTER III

APTITUDE AND PREVIOUS ACHIEVEMENT

CDD III

In the preceding chapter, CDD III students were described in terms of their socio-economic status. This chapter will describe the population in terms of their previous scholastic achievement and measured aptitude. As indications of previous achievement, the ninth grade mid-term general averages and the results of the Metropolitan Achievement Tests will be analyzed. Subtests of the Differential Aptitude Tests and the Stanford Achievement Test were administered to all the CDD III students and samples of college preparatory students from four Centers. A Control group was not available for testing in one Center.

Initially, the CDD group will be described on both aptitude and previous achievement variables in terms of means and standard deviations for each Center as well as the total population. The results of the inter-Center comparisons will then be presented to delineate differences among Centers. Results of the analyses of variance comparing CDD III with the two previous entering CDD populations will then be given. Comparisons with the Control populations will be made to determine whether any differences exist between the Control and CDD groups on aptitude and achievement measures.

Table 35 gives the means and standard deviations for the mid-year ninth grade general average by Center. For the entire CDD III population, the mean mid-year average was approximately 75 per cent. The lowest mean, 69.62, was obtained for Center IV whereas Center III obtained the highest mean, 76.76. It should also be noted that CDD III students in Center IV were the most heterogeneous group with respect to previous achievement. In contrast, Center III had the most homogeneous group of CDD III students in terms of previous achievement.

TABLE 35

Mid-Year Ninth Grade General Average

CDD III

Center	N	Mean	S.D.
I	54	75.09	10.72
II	59	75.72	14.07
III	59	76.76	4.96
IV	53	69.62	17.56
V	59	76.16	7.62
All centers	284	74.77	11.92

The Metropolitan Achievement Test scores were obtained from the students' nomination forms.[1] The four subtests were administered in their ninth year. The range of mean scores on vocabulary subtest is shown in Table 36. Mean performance ranged from 9.53 for Center III to 12.45 for Center I. Center I students showed, by far, the greatest variability in performance on the vocabulary subtest.

TABLE 36

Metropolitan Achievement Test:

Vocabulary - CDD III

Center	N	Mean	S.D.
I	51	12.45	12.53
II	57	10.13	1.81
III	54	9.53	2.17
IV	52	10.56	1.82
V	53	9.83	2.14
All centers	267	10.48	5.79

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[1] Submitted by ninth-grade counselors

As in their performance on the vocabulary subtest, CDD III students as a group performed at tenth grade level in paragraph meaning. Table 37 indicates that mean scores ranged from 9.58 for Center III to 11.24 for Center I. Students in Center I demonstrated the greatest variability in performance in paragraph meaning as they did in vocabulary.

TABLE 37

Metropolitan Achievement Test:
Paragraph Meaning - CDD III

Center	N	Mean	S.D.
I	50	11.24	10.03
II	57	10.07	1.61
III	54	9.58	2.17
IV	52	9.60	2.48
V	53	9.75	1.60
All centers	266	10.04	4.71

CDD III students as a group did not do as well in mathematics performance as they did in reading. Mean scores for problem-solving ranged from 7.91 for Center II to 9.62 for Center V (Table 38). The overall mean score for the CDD III group on problem solving was 8.58. Centers I and V showed extreme variability in scores on this subtest as compared to the other Centers.

TABLE 38

Metropolitan Achievement Test:

Problem Solving - CDD III

Center	N	Mean	S.D.
I	41	9.02	9.72
II	43	7.91	1.31
III	48	8.03	1.34
IV	43	8.51	1.12
V	38	9.62	10.20
All centers	213	8.58	6.11

Students did better in computation than they did in the area of problem solving. The mean score for the entire CDD III group was 9.75, with mean scores ranging from 8.70 for Center V to 11.32 for Center II (Table 39).

TABLE 39

Metropolitan Achievement Test:

Computation - CDD III

Center	N	Mean	S.D.
I	41	8.99	9.27
II	44	11.32	15.25
III	48	9.13	10.55
IV	42	10.52	8.20
V	38	8.70	5.54
All centers	213	9.75	10.37

Since the Differential Aptitude Tests and Stanford Achievement Test were administered during the fall semester of CDD III's first year of the Program, it was also possible to test the students in the Control population. Therefore, comparisons can be made between CDD students and students in the academic track, within each Center, on aptitude measures. The results of the comparisons will be discussed after the aptitude of the CDD III group has been discussed separately.

Table 40 gives the mean raw scores and standard deviations of the Verbal Reasoning Subtest of the Differential Aptitude Tests (DAT). The mean performance obtained by the entire CDD III group was 24.15 which is approximately comparable to the 65th percentile.

TABLE 40

Differential Aptitude Tests

Verbal Reasoning - CDD III

Center	N	Mean	S.D.
I	50	23.16	7.39
II	51	24.49	7.94
III	53	23.02	8.41
IV	52	26.04	8.95
V	54	24.02	8.08
All centers	260	24.15	8.19

The means and standard deviations on the Numerical Ability subtest of the DAT appear in Table 41. The mean for the total group was 19.00, corresponding roughly to the 50th percentile, indicating average performance. The lowest mean (17.22) was obtained for Center I and the highest (20.26) for Center V. The populations of the five Centers are more or less comparable in the extent of variation in scores on this subtest.

TABLE 41

Differential Aptitude Tests:

Numerical Ability - CDD III

Center	N	Mean	S.D.
I	50	17.22	5.48
II	51	19.00	5.52
III	53	18.70	6.56
IV	52	19.71	5.18
V	54	20.26	5.58
All centers	260	19.00	5.74

The scores obtained from the Verbal Reasoning and Numerical Ability subtests are combined to form a score which is a stable measure of aptitude. The mean combined raw score obtained for the entire CDD III group was 43.07 which approximates the 60th percentile (Table 42). The raw scores ranged from 40.38 for Center I to 45.75 for Center IV.

TABLE 42
Differential Aptitude Tests:
VR + NA - CDD III

Center	N	Mean	S.D.
I	50	40.38	9.22
II	51	43.12	11.13
III	53	41.72	11.15
IV	52	45.75	11.01
V	54	44.28	12.54
All centers	260	43.07	11.09

The results of the Abstract Reasoning subtest of the DAT are summarized in Table 43. The mean for total CDD III was 32.51 which lies approximately at the 60th percentile. The means ranged from a low of 31.08 (Center I) to a high of 33.17 (Center III). The CDD III students in Center V were the [illegible]st homogeneous while those in Center I were the most heterogeneous in their performance on the test of Abstract Reasoning.

TABLE 43
Differential Aptitude Tests:
Abstract Reasoning - CDD III

Center	N	Mean	S.D.
I	50	31.08	9.03
II	50	32.60	7.15
III	53	33.17	6.36
IV	52	32.52	8.50
V	54	33.09	5.90
All centers	259	32.51	7.44

The mean raw score for all CDD III students on the English subtest of the Stanford Achievement Test was 46.20 which corresponds to the 36th percentile. For the Reading subtests, the group obtained a mean raw score of 30.64 which corresponds to the 40th percentile.

TABLE 44

Stanford Achievement Test

English and Reading - CDD III

Center	N	English		Reading	
		Mean	S.D.	Mean	S.D.
I	50	43.34	10.89	27.40	8.73
II	51	45.96	13.51	31.34	7.58
III	51	44.45	11.55	29.67	8.09
IV	53	48.53	10.00	33.36	7.24
V	54	48.44	9.89	31.28	10.31
All centers	259	46.20	11.33	30.64	8.64

The number of days absent for the fall semester are presented in Table 45. The mean for total CDD III was 5.84. The lowest mean value was obtained for Center III (3.86) and the highest for Center IV (7.66). The degree of variability in days absent was minimum for Center III and greatest for Center I.

TABLE 45

Number of Days Absent

Fall Semester - CDD III

Center	N	Mean	S.D.
I	40	7.13	11.21
II	52	5.85	5.14
III	50	3.86	2.67
IV	47	7.66	10.53
V	44	4.95	5.58
All centers	233	5.84	7.62

Comparisons were made on all aptitude and achievement variables among Centers. The results of these inter-Center comparisons are displayed in Table 46. The CDD III students in the five Centers were, on the whole, quite similar in aptitude and achievement measures. The analyses of variance indicated that only on the mid-year ninth grade general average did the Centers differ. Center III students were significantly higher in mean ninth year performance than students from the other four Centers (Table 35).

TABLE 46

F Values Obtained From the Analyses of Variance Comparing Five Centers on Aptitude and Previous Achievement

Variable	F	P
Ninth Year Mid-Year General Average	3.287	<.01
Metropolitan Achievement Tests		
Reading: Vocabulary	2.086	>.05
Reading: Par. Meaning	1.096	>.05
Math: Problem Solving	0.555	>.05
Math: Computation Score	0.502	>.05
Differential Aptitude Tests		
Verbal Reasoning	1.155	>.05
Numerical Ability	2.123	>.05
VR + NA	1.877	>.05
Abstract Reasoning	0.647	>.05
Stanford Achievement Test		
English	2.238	>.05
Reading	1.851	>.05
Ninth Year Absences	0.125	>.05

Table 47 indicates the results of the comparisons of CDD III students to CDD I and CDD II students in measured aptitude and prior achievement. In general, CDD III students are significantly lower in aptitude than CDD II and CDD I students, but were comparable to them in previous academic performance.

TABLE 47

F Values Obtained from the

Analyses of Variance Comparing CDD I, CDD II, and CDD III

on Aptitude and Previous Achievement

Variable	F	P
Ninth Grade, Mid-Year General Average	1.882	>.05
Metropolitan Achievement Tests		
Reading: Paragraph Meaning	1.304	>.05
Differential Aptitude Tests		
Verbal Reasoning	10.037	<.01
Numerical Ability	8.712	<.01
VR + NA	14.912	<.01
Abstract Reasoning	2.142	>.05
Stanford Achievement Test		
English	22.897	<.01
Reading	10.502	<.01
Ninth Year Absences	3.721	<.05

The following sequence of tables compare Control III and CDD III groups in each Center and for all Centers on aptitude and standardized achievement measures. Table 48 displays the resulting t values obtained by the comparison of CDD and Control groups on the Verbal Reasoning subtest of the DAT. On the whole, the academic students selected for the Control groups were higher in average verbal reasoning than the CDD III students. Only in Center I were CDD students significantly higher on the average in verbal reasoning.

TABLE 48

Comparison of CDD III and Control III

on the DAT: Verbal Reasoning

Center	Mean CDD	 Control	Diff. Bet. Means	t
I	23.16	17.70	5.46	3.01**
II	24.49	24.00	.49	0.30
IV	26.04	32.23	-6.19	-3.90**
V	24.02	30.93	-6.91	-4.26**
All centers	24.43	27.13	-2.70	-3.10**

**significant at .01 level

Comparisons of means (Table 49) on numerical ability showed a significantly better performance by the Control students from all the four Centers. This superiority of the Control group on this factor was reflected in Center IV and Center V. In Center I, however, the CDD group scored higher than the Control group.

TABLE 49

Comparison of CDD III and Control III

on the DAT: Numerical Ability

Center	Mean		Diff. Bet. Means	t
	CDD	Control		
I	17.22	14.78	2.44	1.98*
II	19.00	20.12	-1.12	-0.97
IV	19.71	25.00	-5.79	-5.63**
V	20.26	24.62	-4.36	-3.80**
All centers	19.08	21.95	-2.87	-4.70**

**significant at the .01 level

As would be expected, the Control group, as a whole, outranked the CDD III group in average performance on the score obtained by combining the Verbal Reasoning and Numerical Ability subtests (Table 50). Again, only in Center I did the CDD group score significantly higher than the Control groups.

TABLE 50

Comparison of CDD III and Control III on the DAT: VR + NA

Center	Mean		Diff. Bet. Means	t
	CDD	Control		
I	40.38	32.48	7.90	3.02**
II	43.12	44.12	-1.00	-0.41
IV	45.75	57.73	-11.98	-5.42**
V	44.28	55.55	-11.27	-4.44**
All centers	43.42	49.08	- 5.66	-4.27

**significant at the .01 level

The performance of the CDD III students from the four Centers on the DAT Abstract Reasoning subtest was comparable to that of the Control students (Table 51). The Control group, however, in Center V scored higher than the CDD group while the CDD students in Center I scored higher than the Control students.

TABLE 51

Comparison of CDD III and Control III on DAT: Abstract Reasoning

Center	Mean		Diff. Bet. Means	t
	CDD	Control		
I	31.08	25.85	5.23	2.49*
II	32.60	32.09	0.51	0.34
IV	32.52	36.00	-3.48	-1.51
V	33.01	36.45	-3.36	-3.09**
All centers	32.34	33.31	-0.97	-1.24

**significant at the .01 level
*significant at the .05 level

The Control group also did better, on the average, than the CDD group on the English subtest of the _Stanford Achievement Test_. When the Control and CDD groups were compared within each Center, only in Center I did the CDD group do better in average performance (Table 52).

TABLE 52

Comparison of CDD III and Control III
on the SAT: English

Center	Mean		Diff. Bet. Means	t
	CDD	Control		
I	43.34	34.91	8.43	3.12**
II	45.96	46.99	-1.03	-0.41
IV	48.53	58.05	-9.52	-4.91**
V	48.44	57.39	-8.95	-4.08**
All centers	46.63	50.89	-4.26	-3.41**

**significant at the .01 level

Table 53 shows that the total Control group scored higher on the average than the total CDD group on the Reading subtest of the Stanford Achievement Test. In two Centers (IV and V) the Control students showed better performance on this subtest than their CDD counterparts. As on the other tests, CDD students in Center I outperformed the Control students.

TABLE 53

Comparison of CDD III and Control III

on the SAT: Reading

Center	Mean CDD	 Control	Diff. bet. Means	t
I	27.40	22.00	5.40	2.90*
II	31.34	32.34	-1.00	-0.62
IV	33.36	38.48	-5.12	-3.36**
V	31.28	37.07	-5.79	-3.17**
All centers	30.89	33.63	-2.74	-2.97**

**significant at the .01 level

In all aptitude subtests except Abstract Reasoning and both achievement subtests, the entire Control groups performed significantly higher than the entire CDD group. Consistently, the CDD group in Center I was superior to the Control group. It should be noted, however, that both the CDD and Control groups in Center I had the lowest performance on all of the tests. In Centers IV and V, the Control group was better than the CDD group in all the tested areas. The CDD group in Center II was comparable to the Control group on all aptitude and achievement measures.

(Additional statistical data on aptitude and previous achievement are contained in Appendix B, p. 116).

CHAPTER IV

ATTENDANCE AND ACHIEVEMENT

The criterion for the success of any educational innovation like the College Discovery and Development Program is usually the improvement in the academic achievement of the students. This is generally done by comparing the performance of the students exposed to the innovation to that of a comparable group exposed to traditional conditions. However, only in the case in which a Control group is comparable to the group under experimental conditions can meaningful comparisons be made. For this Program, selecting a comparable group has ethical problems. Any student who was found to qualify could not be denied entrance for research purposes. Therefore, as an alternative, the control group selected was a randomly selected academic group of students in each Center, as was pointed out in Chapter I. A better suited name for this group might be "standard group", since their performance serves as a norm to be equalled or approached by CDD students. It is from this point of view that the following chapter should be read.

The present chapter will analyze attendance and achievement data for the three CDD classes for both the fall and spring semesters. Data will be discussed separately by semester and by class. Within each class, inter-Center comparisons will then be made to determine differences in attendance and performance of CDD students. The results of comparisons with the Control group will be discussed for each Center and for the total CDD class.

Fall Semester

CDD I

For the fall semester, CDD I students from Center to Center obtained mean general averages ranging from 70.77 to 73.29 (Table 54). Yet there were no overall significant differences among Centers in how their students performed as indicated by an F value of 1.84 obtained in the analysis of variance. The academic students performed consistently better than the CDD students in the fall semester, but these differences were significant only in Centers II, III and IV. This does not mean that CDD students in these three Centers did not perform well; the difference was due to the very high performance of the Control groups in those Centers. There was considerable variability in achievement for the Control groups indicating that CDD classes, although fairly homogeneous among Centers, were being compared to very different norm groups.

TABLE 54

Fall Semester

General Average - Class I

Center	CDD I			Control I			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	95	70.77	13.82	94	71.68	14.83	-0.91	-0.43
II	96	70.92	11.68	76	76.67	12.86	-5.75	-3.02**
III	83	73.29	10.86	109	77.61	10.62	-4.32	-2.74*
IV	76	73.11	6.98	89	81.74	8.33	-8.63	-7.20**
V	75	73.03	7.08	92	74.98	10.32	-1.95	-1.44
All centers	425	72.11	10.77	460	76.52	12.02	-4.41	-5.75**

**significant at the .01 level
*significant at the .05 level

Table 55 presents the attendance data for CDD I and Control I by Center. For the CDD group the mean number of days absent ranged from 6.76 (Center V) to 12.08 (Center I). The analysis of variance (F = 5.13, P <.01) showed that both Centers V and IV had better attendance than Centers I, II, and III. Comparisons between the CDD and Control groups on attendance yielded no significant differences. This indicates that being a member of either the CDD group or Control group did not influence the rate of absenteeism. The variation in attendance was related to the particular Center. For those Centers in which there was a high rate of absenteeism among CDD students, there was a corresponding high rate for Control students.

TABLE 55
Fall Semester
Absences: Class I

Center	CDD I			Control I			Diff. Bet.	
	N	Mean	S.D.	N	Mean	S.D.	Mean	t
I	93	12.08	10.97	88	10.95	13.29	1.13	0.62
II	97	11.46	10.77	72	10.13	7.98	1.33	0.92
III	79	10.95	13.72	104	13.72	11.14	-2.77	-1.69
IV	74	6.76	6.67	89	7.73	6.03	-0.97	-0.96
V	75	7.41	7.74	92	6.53	7.99	0.88	0.72
All centers	418	9.94	9.95	445	9.91	10.08	0.03	0.04

CDD II

CDD II students, in the fall semester of their junior year, obtained mean general averages ranging from 70.60 for Center V to 73.72 for Center IV. The overall general average for CDD II students was 72.23. When the analysis of variance (F = 1.40) was used to make inter-Center comparisons, it revealed that no experiences existed among Centers in terms of general average.

The CDD II students performed better than the academic students in Center I, but the difference was not significant. In the other three Centers, for which there were Control groups, the academic students outperformed the CDD II students (Table 56). Again, it should be noted that the Control students varied among Centers in terms of their academic performance. As in Class I, therefore, the CDD classes were being compared to different norm groups.

TABLE 56

Fall Semester

General Average: Class II

Center	CDD II N	CDD II Mean	CDD II S.D.	Control II N	Control II Mean	Control II S.D.	Diff. Bet Means	t
I	67	73.33	8.31	74	69.68	14.52	3.65	1.84
II	102	72.17	11.47	91	76.47	10.67	-4.30	-2.68**
III	93	71.69	8.93					
IV	72	73.72	6.60	121	80.07	10.31	-6.35	-5.19**
V	75	70.60	8.40	93	72.48	11.01	-1.88	-1.25
All Centers	409	72.23	9.16	379	75.31	12.18	-2.91#	-3.58**

**significant at the .01 level

#The difference between the means for all Centers was based on the four Centers with Control groups. This is the case for all subsequent comparisons for Classes II and III.

Attendance data for CDD II and Control II are presented in Table 57. For the CDD groups, the mean number of days absent varied from 6.75 (Center III) to 14.58 (Center II). The mean for total CDD II was 10.39. There were significant differences between the Centers (*F* = 8.14, p <.01) in absenteeism among their CDD students. Centers IV, V, and I had lower absentee rates than Centers III and II. Comparisons between the CDD and Control groups in each of four Centers showed the Control group in Center II to have a lower rate of absenteeism than the CDD group. Over four Centers, the Control group had a lower rate of absenteeism.

TABLE 57

Fall Semester

Absences: Class II

Center	CDD II			Control II			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	65	7.82	8.39	76	10.26	10.40	-2.44	-1.53
II	101	14.58	15.55	90	8.48	7.32	6.10	3.51**
III	95	12.87	12.57					
IV	68	6.75	5.44	107	7.62	4.43	-0.87	-1.10
V	75	7.11	9.93	93	5.38	7.22	1.73	1.26
All centers	404	10.39	11.97	366	7.81	7.58	1.81	2.34*

**significant at .01 level
*significant at .05 level

One should note that it was the high average number of absences in Center II that pulled up the mean number of absences for all Centers for the CDD groups. This high average for Center II might have been due to a few extremely high absentee rates, indicated by the high standard deviation.

CDD III

CDD III students obtained an overall mean general average of 73.71 for their first semester in the Program. This did not differ significantly from the mean performance of the other two CDD groups in their first semester, as indicated by the analysis of variance ($\underline{F} = 2.15$). The mean general average for CDD III students ranged in value from 70.82 for Center IV to 77.25 for Center II (Table 58). The variation in performance from Center to Center was definitely significant ($\underline{F} = 5.69$). Students in Center II outperformed those CDD students in Centers III, IV and V. Center I students also did better than students in Centers V and IV. Center IV students were outperformed by students in all the Centers save for those students in Center V.

Generally, CDD students did better than the academic students selected for the Control group but this difference did not prove to be significant. Yet when individual Center comparisons were made, the CDD III group did so significantly better than the Control group in Center I, whereas in Center IV the academic students outperformed the CDD students.

Table 58 indicates an entirely different picture than the corresponding tables for Class I and II for fall general average. CDD III students showed significant variability in performance among Centers. This was not so in the two previous classes. This, however, was simply a reflection of variability in previous achievement, indicating a change in the composition of the CDD groups in the five Centers. This seemed to have been the result of a smaller field of nominees from which to select students to participate in the Program. This was especially true in Centers IV and V, which had the smallest number of nominees eligible in terms of economic criteria for the CDD Program.

TABLE 58

Fall Semester

General Average: Class III

	CDD III			Control III			Diff. Bet.	
Center	N	Mean	S.D.	N	Mean	S.D.	Means	t
I	54	75.15	8.53	73	63.05	16.22	12.10	5.40**
II	55	77.25	8.13	90	73.72	13.63	3.53	1.94
III	57	74.04	7.59					
IV	57	70.82	7.18	87	77.20	12 22	-6.38	-3.91**
V	55	71.38	9.70	90	73.17	12.80	-1.79	-0.95
All centers	278	73.71	8.60	340	72.17	14.58	1.45	1.51

**significant at the .01 level

Attendance data on both CDD III and Control III are contained in Table 59. The mean number of absences for the Fall was 5.27 for total CDD III from the five Centers. The CDD means ranged from 3.36 (Center V) to 7.75 (Center III). There was again significant inter-Center differences in rate of absenteeism, Centers V, I, IV having better attendance records among their CDD III students than Centers III, and II. When compared to the academic students, CDD III students in Centers I, II, and IV had better attendance than the Control groups over the four Centers with Control groups, the mean number of fall absences for the Control group was significantly higher than that for the CDD total. Notable in this table is the consistently lower rate of absenteeism among CDD students in all Centers when compared to the Control groups. This could be possibly due to increased motivation occurring among CDD students. One is therefore inclined to relate this better attendance record to the better performance of CDD students in Centers I and II.

TABLE 59

Fall Semester

Absences: Class III

Center	CDD III			Control III			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	54	4.15	3.95	76	13.36	15.24	-9.21	-5.00**
II	54	6.63	6.15	87	12.26	12.57	-5.63	-3.53**
III	57	7.75	8.55					
IV	55	4.35	3.65	86	7.10	5.18	-2.75	-3.67**
V	55	3.36	3.90	90	4.63	5.98	-1.27	-1.54
All centers	275	5.27	5.84	339	9.17	11.04	-4.56	-6.71**

**significant at the .01 level

Spring Semester

Since the data on academic achievement for the spring semester include students' performance on the Regents examinations, an explanation of how the results are to be read and interpreted is in order.

There was considerable variation in curricular offerings from Center to Center as well as variation in subjects taken by the individual students. No attempts were made to analyze the Regents data under separate subject headings since this would reduce the number of cases in each analysis so as to preclude any meaningful interpretations from the results. However, summarizing statistics of Regents performance will be presented, with the knowledge that scores on these standard examinations are good indications of class standing.

CDD I

The academic performance of CDD I students and Control I students in the Spring semester is shown in Table 60. The mean of the general average of CDD students as a total group was 72.17, which was comparable to their performance in the fall semester. The lowest mean (71.08) was obtained for Center II whereas the highest mean (73.54) was obtained for Center IV. This variability in means among Centers was nonsignificant ($\underline{F} = 0.93$). The Control students outperformed the CDD students as they did in the fall semester.

This third year for CDD I and Control I students was their senior year. By this time Control students who had found difficulty handling academic subjects were shifted to another course of study, as for example commercial, or general programs. This selecting out of the more academically qualified Control students caused the group remaining to be superior in their performance. At the same time CDD students were encouraged to remain in the Program in spite of academic difficulty.

Therefore, it was no surprise that there was a gap in mean performance between the CDD group and the Control group. In addition, CDD students upon first entrance to the Program were treated more supportively. Supports were considerably decreased as CDD students advanced through the Program so that their transition to college would be facilitated, and that expectation would be realistic in relation to the criteria for college admission.

TABLE 60

Spring Semester

General Average - Class I

Center	CDD I			Control I			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	54	73.52	9.96	53	73.21	14.49	.31	0.13
II	78	71.08	12.07	28	74.86	14.00	-3.78	-1.25
III	59	71.42	10.29	92	76.63	13.00	-5.21	-2.72**
IV	68	73.54	10.36	55	81.71	7.08	-8.17	-5.14**
V	67	71.63	6.09	44	79.11	8.89	-7.49	-4.83**
All Centers	326	72.17	10.01	272	77.21	12.13	-5.04	-5.47**

**significant at the .01 level

In the spring semester of the senior year, students took their three-year English Regents. The results of the examination are found below in Table 61. Even though the mean grade for CDD students ranged from 65.61 for Center III to 73.52 for Center IV, there was no real difference in students' performance from Center to Center. The academic students did do better than the CDD students in Centers III and V, and outperformed the CDD students when the two groups were compared as total groups. As the table indicates, many more CDD students took their English Regents in the senior year than Control students.

TABLE 61

English Regents

Class I

Center	CDD I N	CDD I Mean	CDD I S.D.	Control I N	Control I Mean	Control I S.D.	Diff. Bet. Means	t
I	48	67.75	9.61	34	66.50	13.87	1.25	0.45
II	71	69.14	9.13	5	70.40	7.50	- .26	-0.32
III	56	65.61	13.18	77	74.65	10.84	-9.04	-4.17**
IV	64	73.52	6.77	37	74.95	6.69	-1.43	-1.02
V	66	68.47	7.95	43	75.91	9.09	-7.44	-4.34**
All Centers	305	69.08	9.48	196	73.46	10.77	-4.38	-4.64**

**significant at the .01 level

Table 62 displays the grades for the language Regents. Caution should be used in interpreting the meaning of these scores since students were not necessarily taking the same language. To be considered with this is the possible difference in difficulty for various languages. For example, Spanish is viewed by many as an easier language to learn than French. As a result the differences in language competence may not necessarily reflect ability differences but rather differences in level of difficulty of the examinations.

Inter-Center comparisons indicated no significant difference in mean performance on language Regents for CDD students. When the Control and CDD students were compared across all Centers, the academic students did do significantly better.

TABLE 62

Language Regents

Class I

Center	CDD I			Control I			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	16	77.31	23.61	9	80.44	14.48	-3.13	-0.39
II	18	68.72	16.85	7	69.14	15.59	- .42	-0.06
III	15	75.47	14.52	22	79.00	14.04	-3.53	-0.72
IV	23	73.87	10.61	15	86.53	12.35	-12.66	-3.17**
V	22	72.46	13.22	6	82.50	9.85	-10.04	-1.91
All Centers	94	73.57	15.65	59	79.52	13.91	-5.95	-2.44*

**significant at the .01 level
*significant at the .05 level

The results of the Mathematics Regents in the senior year are given in Table 63. Because of the small number of students in both CDD and Control groups in each Center, the means and standard deviations by Center are simply presented without any comparison or discussion. However, comparison of the CDD and Control total group means showed a significant difference in favor of the academic students in their performance on the senior Mathematics Regents examination (t = -3.17).

TABLE 63

Mathematics Regents

Class I

Center	CDD I			Control I		
	N	Mean	S.D.	N	Mean	S.D.
I	23	57.87	12.32	18	68.67	11.14
II	30	54.80	15.51	4	50.00	33.91
III	15	50.73	23.33	19	56.63	17.02
IV	9	45.11	25.14	2	85.00	9.90
V	20	51.45	19.53	7	66.86	10.27
All Centers	97	53.31	18.03	50	63.00	17.09

Means and standard deviations for the Science Regents[1] examination are shown in Table 64. The CDD means ranged from 60.14 to 80.60. Excluding the mean obtained in Center I which was based on only five cases, mean performance of the CDD students was fairly uniform among Centers. Comparison of performance between CDD and academic students yielded a significant difference in favor of the academic group, a difference which was also reflected in four of the Centers.

TABLE 64

Science Regents

Class I

Center	CDD I			Control I			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	5	80.60	12.42	12	71.75	10.88	8.85	1.26
II	20	64.55	12.02	9	78.00	11.35	-13.45	-2.76**
III	28	60.14	13.25	22	74.18	19.68	-14.04	-2.81**
IV	37	68.46	9.84	33	84.36	10.35	-15.90	-6.47**
V	40	64.78	13.76	26	75.08	14.36	-10.30	-2.85**
All centers	130	65.40	12.79	102	77.75	14.48	-12.35	-6.76**

**significant at the .01 level

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[1] These scores are like those for Language Regents, for a variety of subjects (Physics, Chemistry, earth Science and biology).

Attendance was considered for the entire school year rather than just the spring semester alone. The data are presented in Table 65. The average number of absences for the CDD group for the whole year was 15.74. When attendance was compared for CDD students between Centers, a significant difference was found (F = 5.05). The differences between Centers, however, seem more attributable to patterns within each school with regard to attendance rather than to variations among CDD populations.

TABLE 65

Total Absences

Class I

Center	CDD I			Control I			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	54	9.54	7.69	62	13.03	12.23	-3.49	-1.85
II	81	18.53	18.28	22	14.36	12.56	4.17	1.22
III	60	17.95	15.93	91	20.20	15.30	-2.25	-0.86
IV	74	18.07	14.11	72	19.88	12.12	-1.81	-0.83
V	68	12.84	9.49	44	11.00	10.91	1.84	0.91
All Centers	337	15.74	14.35	291	16.76	13.53	-1.02	-0.92

CDD II

CDD II students, in their junior year of high school, obtained a mean academic average of 68.98 (Table 66). The variation in average performance from Center to Center was significant, with averages ranging from 66.10 for Center III to 74.08 for Center IV. CDD students in Center IV significantly outperformed CDD students in Centers II, III and V. When compared to the academic population in all Centers CDD students did not do as well.

TABLE 66

Spring Semester

General Average - Class II

Center	CDD II			Control II			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	61	71.03	10.89	53	72.62	12.84	-1.59	-0.70
II	96	67.59	17.73	57	75.56	8.30	-7.97	-3.74**
III	79	66.10	15.00					
IV	73	74.08	6.06	79	79.22	11.41	-5.14	-3.48**
V	74	67.14	9.56	65	74.63	10.41	-7.49	-4.37**
All Centers	383	68.98	16.72	254	75.85	11.06	-6.11	-5.09**

**significant at the .01 level

The performance of both CDD II and Control II students on the Language Regents examination is summarized in Table 67. The means for the CDD groups ranged from 61.64 to 75.81, indicating significant variability in average achievement from Center to Center. Again, this may be due to differences in foreign language and grade level of the test taken. Comparison of CDD groups with Control groups within Centers showed better performance by the academic students only in Center IV. Comparison of total CDD and Control students over four Centers yielded a non-significant difference.

TABLE 67

Language Regents

Class II

Center	CDD II			Control II			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	25	73.72	12.85	23	77.87	13.77	-4.15	-1.05
II	36	75.81	18.67	26	71.88	10.55	3.93	1.03
III	39	61.64	27.70					
IV	53	74.81	11.26	40	86.10	10.90	-11.29	-4.82**
V	48	66.60	17.52	22	70.05	11.96	- 3.45	-0.94
All Centers	201	70.34	18.97	111	76.47	19.62	-4.05	-1.81

**significant at the .01 level

Table 68 presents means and standard deviations for the performance of Class II on the Mathematics Regents examination. Center means for CDD II ranged from 46.59 for Center II to 63.98 for Center IV, showing that the variation among Centers in their performance was statistically significant. Centers IV or I showed better performance than that of Centers III, V, or II. When compared to the performance of the academic students that of the CDD students from four Centers was significantly lower. This difference in performance was reflected in Centers IV and V.

TABLE 68

Mathematics Regents

Class II

Center	CDD II			Control II			Diff. Bet.	
	N	Mean	S.D.	N	Mean	S.D.	Means	t
I	26	61.50	15.78	28	66.89	16.25	-5.39	-1.21
II	37	46.59	22.58	13	55.08	28.25	-8.49	-0.94
III	51	51.08	22.77					
IV	52	63.98	17.33	85	81.85	18.39	-17.87	-5.68**
V	43	50.47	27.28	25	71.64	19.31	-21.17	-4.05**
All Centers	209	54.67	21.46	151	75.08	20.80	-19.26	-8.08**

**significant at the .05 level

Data for Class II on their science Regents performance is given in Table 69. Mean grades on the examinations for the CDD group ranged from 61.09 for Center V to 69.59 for Center I. When a comparison was made between the Control group and CDD group across all Centers, the academic students did better, obtaining a mean science Regents grade of 76.36. In Centers I and II there were no significant differences between these two groups in their performance.

TABLE 69

Science Regents

Class II

Center	CDD II N	CDD II Mean	CDD II S.D.	Control II N	Control II Mean	Control II S.D.	Diff. Bet. Means	t
I	22	69.59	11.86	20	72.30	14.27	-2.71	-0.65
II	34	66.65	11.36	28	71.68	10.51	-5.03	-1.78
III	47	62.47	11.57					
IV	63	65.43	13.18	81	80.37	12.51	-14.94	-6.85**
V	68	61.09	13.36	47	73.98	13.31	-12.89	-5.05**
All Centers	234	64.14	12.71	176	76.36	13.06	-11.80	-8.61**

**significant at the .01 level

The means and standard deviations by Center for the total number of days absent for the entire school year are given in Table 70. The means ranged in value from 14.99 (Center IV) to 21.34 (Center II); the analysis of variance, however, showed that there was no significant variation from Center to Center in rate of absenteeism among CDD II students. As a group, the CDD students had a higher absentee rate than the academic students; this was reflected in Centers II and V.

TABLE 70

Total Year Absences

Class II

Center	CDD II			Control II			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	61	17.31	15.65	54	14.48	10.46	2.83	1.14
II	95	21.34	21.92	56	14.30	12.70	7.04	2.48*
III	80	20.79	20.57					
IV	71	14.99	14.40	103	13.46	7.54	1.53	.82
V	74	15.64	17.12	63	8.97	8.17	7.47	2.95**
All centers	381	18.29	18.61	276	12.80	9.68	4.82	4.04**

**significant at the .01 level
*significant at the .05 level

CDD III

CDD III students were in the tenth grade during the year covered by this report. Their general performances in the Spring term is summarized in the table of means and standard deviations for Spring general average (Table 71). The highest Center mean was 74.38 (Center II) and the lowest was 67.47 (Center III). The variance among Center means was significant (F = 3.528). CDD III students in Center II performed better than those in Centers IV, V, or III while Center I students did better than those in Centers V or III.

CDD III, as a group, was comparable in general academic performance to Control III. However, CDD III students in Center I performed better than the academic students, while the Control groups in Centers IV and V did better academically than their CDD counterparts. This difference in direction could be explained by the considerable variation in performance among the academic students from Center to Center. While the Control students in Center I had a mean general average of 60.46, those in Center IV obtained a mean of 79.22.

TABLE 71

Spring General Average

Class III

Center	CDD III			Control III			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	53	73.47	11.40	61	60.46	21.38	13.01	4.09**
II	53	74.38	11.21	44	72.55	19.73	0.83	.54
III	60	67.47	13.23					
IV	54	68.91	15.13	79	79.22	11.41	-10.31	-4.21**
V	51	68.61	9.50	80	74.26	11.56	-5.65	-3.03**
All Centers	271	70.49	12.51	264	72.27	17.14	-0.92	-0.67

**significant at the .01 level

College Discovery students obtained a mean language Regents grade of 66.57 when performance was averaged across all Centers. Table 72 displays the means and standard deviations of language Regents performance for students in both the CDD and Control groups for all Centers, with the exception of Center III for which there was no Control group. There was great variability in performance for the CDD III students from Center to Center. This certainty may have been due to differences in difficulty of the languages taken. Averages ranged from 58.31 for Center V to as high as 77.96 for Center I. Control students did do better as a group than the CDD students, yet this was echoed only within Center IV.

TABLE 72

Language Regents

Class III

Center	CDD III			Control III			Diff. Bet.	
	N	Mean	S.D.	N	Mean	S.D.	Means	t
I	26	77.96	15.13	18	75.33	18.40	2.63	0.49
II	26	69.62	19.39	26	71.73	16.79	-2.11	-0.41
III	47	59.87	26.32					
IV	33	68.76	12.12	62	80.03	13.23	-11.27	-4.13**
V	16	58.31	19.70	59	69.03	18.64	-10.72	-1.90
All Centers	148	66.57	20.87	165	74.03	16.97	- 4.34	-2.01*

**significant at the .01 level
*significant at the .05 level

Table 73 summarizes the performance of Class III on the tenth year Regents examination in Mathematics. The means for CDD III ranged from 43.56 (Center V) to 60.84 (Center I). The performance of CDD III students in Center V was significantly lower than that of CDD students in Centers I, IV, or II. The mean for total Control III was significantly higher than that for total CDD III. In three Centers (II, IV, V), the academic students performed better than the CDD students.

TABLE 73

Tenth Year Mathematics Regents

Class III

Center	CDD III			Control III			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	44	60.84	22.53	17	58.35	15.82	2.49	0.63
II	52	57.38	19.70	22	72.36	23.34	-14.98	-2.58**
III	47	52.09	23.34					
IV	47	58.70	21.64	66	76.15	19.19	-17.45	-4.38**
V	48	43.56	25.10	58	67.48	25.19	-23.92	-4.83**
All Centers	238	54.45	23.09	163	70.70	22.26	15.67	-6.47**

**significant at the .01 level

Table 74 presents the results of the Science Regents for all students in Class III, both in the CDD Program and regular academic track. The average performance for all CDD students was 64.48. Again, one should keep in mind that different sciences were contributing to this average. Mean Science Regents grades ranged from 59.92 for Center V to 69.65 for Center IV. When comparisons were made between the CDD students and Control students on mean Science Regents performance, only in Center I was there no significant difference. The academic students seemed to consistently outperform the CDD students.

TABLE 74

Science Regents

Class III

Center	CDD III			Control III			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
I	49	67.55	9.14	21	63.10	11.67	4.45	1.52
II	51	63.65	12.85	30	78.07	14.02	-14.42	-4.54**
III	39	61.05	14.92					
IV	49	69.65	9.52	74	78.82	11.42	- 9.17	-4.78**
V	50	59.92	12.85	68	75.74	13.02	-15.82	-6.51**
All Centers	238	64.48	12.38	193	75.91	13.18	-10.76	-8.50**

**significant at the .01 level

Attendance data for Class III are presented in Table 75. The mean number of days absent for CDD III ranged from 9.54 for Center I to 19.66 for Center III. This variation in Center means was significant at the .01 level ($\underline{F} = 7.156$). Centers III and II had higher rates of absenteeism than Center V, IV, or I. Comparison of CDD III students from four Centers with the academic students showed that CDD students had a lower absentee rate. This was also seen in all centers except Center V.

TABLE 75

Total Year Absences

Class III

Center	CDD III			Control III			Diff. Bet.	
	N	Mean	S.D.	N	Mean	S.D.	Means	t
I	54	9.54	7.69	48	26.31	25.49	-16.77	-4.34**
II	81	18.53	18.28	31	23.68	22.12	- 5.15	-1.14
III	59	19.66	19.52					
IV	54	9.72	7.85	85	13.93	7.82	- 4.21	-3.06**
V	68	12.84	9.48	82	9.70	10.30	3.14	1.93
All centers	316	14.47	14.55	246	16.16	16.81	-2.88	-2.14*

**significant at the .01 level
*significant at the .05 level

Summary

Inter-Center comparisons on fall and spring achievement and attendance were made on each CDD population. The F values obtained are presented in Tables 76 and 77.

In general for the fall semester there were no inter-Center differences in academic performance for CDD I and CDD II. However, significant variability among Centers was observed for CDD III. In all three classes, there was significant variation among Centers in rate of absenteeism.

Comparisons of Centers in the spring semester revealed a very interesting trend. CDD II and CDD III students in the five Centers seemed to be very different in terms of their academic performance, whereas, CDD I students in the different Centers were homogeneous. Only in the number of total year absences did the Centers differ significantly for the CDD I students.

TABLE 76

F Values Obtained From the Analyses of Variance Comparing Five Centers on Fall Semester Academic Performance and Attendance - CDD I, CDD II, CDD III

Variable	F	P
CDD I		
General Average	1.841	>.05
Absences	5.126	<.01
CDD II		
General Average	1.396	>.05
Absences	8.413	<.01
CDD III		
General Average	5.691	<.01
Absences	6.003	<.01

TABLE 77

F Values Obtained From the Analyses of Variance on Spring Semester Academic Performance and Attendance

CDD I, CDD II, CDD III

Variable	F	P
CDD I		
General Average	0.926	>.05
English Regents	1.860	>.05
Language Regents	0.727	>.05
Math Regents	1.003	>.05
Total Year Absences	5.047	<.01
CDD II		
General Average	2.956	<.05
Language Regents	4.462	<.01
Math Regents	5.621	<.01
Science Regents	2.755	<.05
Total Year Absences	1.991	>.05
CDD III		
General Average	3.528	<.01
Language Regents	4.335	<.01
Math Regents	4.472	<.01
Science Regents	5.809	<.01
Total Year Absences	7.156	<.01

In order to delineate the academic progress of the students in Class I and Class II, an analysis of variance with repeated measures was performed on general averages within the CDD and Control groups.

The F value (34.76) obtained for CDD I was significant at the .01 level, indicating significant variability from term to term. Table 78 presents the mean general average of CDD I for six terms and the differences between pairs of means. The differences were tested for significance by using the Newman-Kuels test. In general, a decreasing trend was observed for CDD I in general average over the four semesters. The mean general average for the two terms of the 10th year were significantly higher than the means obtained for each term of the 11th and 12th years. The mean for the Fall term of the 11th year was significantly higher than the mean for each of the last three terms in high school. There were no significant differences between means obtained for these last three terms.

TABLE 78

Differences Between Means

Over Six Semesters

CDD I

Semester		Fall 1965	Spring 1966	Fall 1966	Fall 1967	Spring 1967	Spring 1968
	Mean	77.13	76.87	74.97	73.72	73.52	72.92
Fall 1965	77.13		.26	2.16*	3.41*	3.61*	4.21*
Spr. 1966	76.87			1.90*	3.15*	3.35*	3.95*
Fall 1966	74.97				1.25*	1.45*	2.05*
Fall 1967	73.72					.20	.80
Spr. 1967	73.52						.60
Spr. 1968	72.92						

*significant at the .05 level

When the trend in mean general average was examined for the CDD II group over four semesters, significant differences were found (F = 45.19). Table 79 displays the mean general average for each semester as well as the differences between means. To determine whether or not these differences were significant, t tests were used. CDD II students performed less well with each new term. Only between the spring and fall semesters of 1967 was the difference in performance not significant.

TABLE 79

Differences Between Means

Over Four Semesters

CDD II

Semester		Fall 1966	Spring 1967	Fall 1967	Spring 1968
	Mean	74.52	73.17	72.91	69.63
Fall 1966	74.52		1.35*	1.61*	4.89*
Spring 1967	73.17			.26	3.54*
Fall 1967	72.91				3.28*
Spring 1968	69.63				

*significant at the .05 level

When trends in academic performance were examined for both the corresponding academic Control groups, Control II students displayed a consistency in achievement over the four terms (F = 1.73). Control I students showed slight differences in average performance between the six semesters (F = 3.19). However, the trend in performance is not downward but rather alternating in pattern. Students seem to do better in the fall semester than in Spring.

Table 80 indicates the mean averages and differences between means for the six semesters for Control I.

TABLE 80

Differences Between Means

Over Six Semesters

Control I

Semester		Fall 1967	Fall 1965	Fall 1966	Spring 1967	Spring 1968	Spring 1966
	Mean	80.73	80.55	79.86	79.20	78.70	77.45
Fall 1967	80.73		.18	.87	1.53	2.03*	3.28*
Fall 1965	80.55			.69	1.35	1.85	3.10*
Fall 1966	79.86				.66	1.16	2.41*
Spr. 1967	79.20					.50	1.75*
Spr. 1968	78.70						1.25
Spr. 1966	77.45						

*significant at the .05 level

(Additional statistical data on achievement are contained in Appendix C, p. 120).

CHAPTER V

THE SUMMER PROGRAM

The summer of 1967 was the third year for Project Double Discovery. This is an eight-week summer program operating under Upward Bound. Students selected from the CDD group on the basis of economic criteria resided at the Columbia University campus. One college student was assigned as acting counselor for every six students. The counselors were predominantly from Columbia and Barnard College. There was an attempt to have the ethnic composition of the counselors reflect that of the students. Both credit and non-credit subjects were offered. The enrichment courses which provided no high school credit included such activities as music, art, swimming, journalism and theatre.

Students who were not invited to attend the Columbia Program were not necessarily deprived of a summer compensatory experience. Opportunities for study and group participation were provided in high schools, other college campuses, and summer camps.

CDD I

CDD I students were invited for the third time to attend the summer program at Columbia. Presented in Table 81 are the means and standard deviations of achievement variables for Upward Bound and Non-Upward Bound. The differences between the means were analyzed by use of t tests to determine whether or not they were significant.

necessarily mean that they were still members of the CDD Program. The data analyzed for all Upward Bound groups included only those students who were still members of CDD. Table 82 displays the means and standard deviations of achievement variables for Upward Bound II and Non-Upward Bound II students. The differences between the two groups on achievement measures were analyzed by use of t tests to determine whether or not they were significant.

TABLE 82

Upward Bound and Non-Upward Bound

Achievement - CDD II

Achievement Variables	Upward Bound			Non-Upward Bound			Diff. Bet. Means	t
	N	Mean	S.D.	N	Mean	S.D.		
Spring Average	74	68.47	23.99	303	69.49	28.57	-1.02	-0.31
Math Regents	35	54.49	16.15	176	55.86	11.01	-1.37	-0.47
Science Regents	42	59.74	11.01	193	65.47	14.30	-5.73	-2.85**
Total Absences	75	22.72	9.06	301	16.46	16.01	6.26	4.47**

**significant at the .01 level

Non-Upward Bound students did better than Upward Bound students on the Science Regents. The data indicate that Upward Bound students were absent on the average more often than Non-Upward Bound students.

CDD III

The CDD III students who comprised the third Upward Bound group spent their first summer on the Columbia campus. Table 83 presents the means and standard deviations of achievement measures for the 1967-68 school year.

TABLE 83

Upward Bound and Non-Upward Bound

Achievement - CDD III

Achievement Variables	Upward Bound N	Upward Bound Mean	Upward Bound S.D.	Non-Upward Bound N	Non-Upward Bound Mean	Non-Upward Bound S.D.	Diff. Bet. Means	*t*
Spring Average	41	68.56	8.75	236	71.51	11.47	-2.95	-1.88
Math Regents	33	48.64	21.92	207	55.95	22.25	-7.31	-0.86
Science Regents	38	61.71	11.27	218	65.95	11.16	-4.24	-2.12*
Total Absences	40	13.28	14.89	232	12.78	15.50	0.50	0.19

*significant at the .05 level

Students who did not take part in the summer program did better than the Upward Bound students on the Science Regents. Again, it should be noted that the computed means for the Science Regents were based on more than one kind of Science subject.

CHAPTER VI

Graduates and Dropouts

The major goal posed for the College Discovery and Development Program at its inception was to discover and develop the college potential of disadvantaged youth, who, without the benefit of intensive and continuous educational support, would be unlikely to enter college. Thus the students who were invited to the Program were not winners but those who were likely to drop out of school not only because of a frequent experience of failure but also the feeling that going to college was beyond their circumstances.

Although the completion of a college course would be the ultimate measure of a CDD student's success, graduation from high school and admission into some college program means that a critical phase in the students' educational progress has been successfully passed.

The first group of students admitted to the Program was supposed to complete the high school phase June 1968 and to start the college phase September 1968. This chapter then will be concerned with the careers of CDD I students in terms of high school graduation and college admission. It seeks to answer the following questions:

1. How many students completed the Program?
2. What type of college Programs did they elect after high school?
3. How many students failed to complete the Program?
4. What were the reasons for dropping out?
5. How did the students who dropped out compare with those who successfully completed the high school phase?

Students graduating in the New York City public high schools are eligible for different kinds of diplomas depending upon the student's academic average and performance on the Regents examinations. Table 84 shows the number of CDD I students from each of the five Centers receiving the academic, commercial, or general diploma. To be noted is the high percentage of students receiving academic diplomas.

TABLE 84

Types of Diplomas

Center	Academic		Commercial		General		Total
	N	%	N	%	N	%	
I	35	50.7	0	0.0	34	49.3	69
II	55	68.8	0	0.0	25	31.2	80
III	39	69.6	0	0.0	17	30.4	56
IV	57	75.0	1	1.3	18	23.7	76
V	50	67.6	0	0.0	24	32.4	74
All Centers	236	66.5	1	0.3	118	33.2	355

Although CDD students were promised admission to some college within City University upon successful completion of the program, their admission to a four-year college or specific programs within the University was dependent upon their meeting certain requirements. Students were classified as eligible for one of the following four categories:

1) Category I: This includes all the four-year programs leading to a baccalaureate degree. The general academic average required to be considered for this program is 82 or better.
2) Category II: This refers to the two-year transfer programs in the community colleges. These two-year programs prepare students for entry into a four-year college in the junior year. Graduates of transfer programs receive the Associate in Arts or Associate in Science degree and are automatically admitted to the junior year of a four-year college of their choice in the City University.[1] The general academic average required to be considered for this category ranged from 77 to 81.99.

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[1] The University Application Processing Center, Information for Applicants to the City University of New York, 1969, p. 5.

3) Category III: This category includes two kinds of programs - the two-year terminal program or career program and Prong I. The career programs combine technical preparation with a firm grounding in general education. Upon graduation, the student receives the Associate in Applied Science degree and is prepared to enter the world of work on a semi-professional level. If he chooses, a student may be able to transfer certain course credits toward a baccalaureate program.[2] Prong I of the College Discovery and Development Program provides supportive services for the student so that upon completion of the two years at the community college level, he will be able academically to transfer to a four-year program leading to a baccalaureate degree. The academic average required for consideration for this category ranges from 70 to 76.9.

4) Category IV: This category refers to the Urban Skills Centers. Here the student is provided with training for a particular occupation or is provided with remedial services so that he can later be eligible to meet entrance requirements for college admission. Students with academic averages below 70 were considered for this category.

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[2] _Ibid._, p. 5.

Table 85 presents the number and per cent of students who graduated from high school as of June 1968, students who were expected to graduate and those who did not complete the College Discovery and Development Program. An inspection of the table indicates that eventually 73.4 per cent of the College Discovery students will successfully complete the Program.

TABLE 85

Graduates

Date of Graduation	CDD Students	
	N	%
June 1968	328	59.6
August 1968	27	4.9
After August 1968	49	8.9
Non-Graduates	146	26.6
All Students	550*	100.0

Table 86 indicates the post high school programs in which the graduating CDD students were accepted.

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*This number refers to the total number of students who actually appeared in the fall semester of 1956-1965 to take part in the College Discovery and Development Program. Previous computations have been based on the 579 students who were invited to attend. Since an application for admission to the Program was viewed as a statement of serious intent to enter, socio-economic data analyzed in prior reports included these students as well. But with a view toward the actual effect of the CDD Program, the use of the number of students actually appearing is necessary.

TABLE 86

College Admissions of CDD I Graduates as of August 1968

Program	N	Per Cent of Graduate (base 335)	Per Cent of Original Population (base 550)
4 Year CUNY Liberal Arts	43	12.1	7.8
2 Year CUNY Transfer	81	23.0	14.7
2 Year Career Program	48	13.5	8.7
2 Year Prong I	92	26.2	16.7
Urban Skills Centers	16	4.3	2.9
State University of New York	25	7.0	4.6
Private Colleges or Universities	47	13.2	8.6
Other	3	0.7	0.6
All Programs	355	100.0	64.6

By the fall of 1968, 288 (52.4%) of the 550 CDD I students originally enrolled in September 1965, will be involved in college programs leading to baccalaureate degrees. Forty-eight (13.5%) of this class will be enrolled in two-year programs leading to Associate in Arts degrees. In addition there will be forty-nine other CDD I students (8.9%) who will remain in twelfth grade. Table 87 summarizes the disposition of CDD I students. Of the 550 students who began the College Discovery and Development Program in September, 1965 sixty-four per cent (64%) were graduated by August, 1968 to take part in some post-secondary school education.

TABLE 87

Disposition of CDD I Students - Fall 1968

Program	N	Per Cent of Graduates (base 355)	Per Cent of Original Enrollment (base 550)
CUNY: Liberal Arts	216	61.3	39.2
Other: Liberal Arts	72	20.2	13.2
sub total	(288)	(81.5)	(52.4)
Associate in Arts	48	13.5	8.7
sub total degree	(336)	(95.0)	(61.1)
Urban Skill	16	4.3	2.9
total post secondary	(352)	(99.3)	(64.0)
Military duty	3	0.7	0.6
to complete 12th grade*	49		8.9
	(404)		(73.5)
Total attrition to date	146		26.5
all students	550		100.0

*as of 8/31/68

To determine which factors were associated with the success of CDD I students in the high school phase of the Program, an adjunct study[3] used the nomination and personal data that came with the students' applications to the Program, a rating scale, and results of standardized tests administered to the students while in the tenth grade.

The students were grouped into 3 criterion groups according to category of college admission. Group A included students in Category I and II; Group B included those in Category III and IV, and Group C consisted of those who failed to complete the Program.

The distributions of these three groups of students under certain categories were tested for significance of deviation from expectancy by the Chi-Square Technique. It was found that the following categorial variables were significantly associated with success in the Program: sex, father's employment status, intactness of family, fathers' birthplace, mothers' birthplace, type of high school program, and whether father was living or deceased.

Girls tended to belong to Group A while boys tended to be in Group C. Students whose parents were employed tended to be in Groups A and B and those whose parents were unemployed or on whom no information about employment was available tended to dropout of the Program. Students coming from homes where both parents were present were more likely to succeed in the Program than those where one or both parents were absent. Those whose parents were born in Puerto Rico tended to be in A while those born in the U.S. South and U.S. North tended to be in B. Parents place of birth was not associated with dropping out. Students who came from Higher Horizons or Special Service Schools tended more to drop out than to complete the Program. Students whose parents were alive had a tendency to be more in Group A and to be less in Group C, those whose fathers were deceased tended to be in Group A and C, while those on whom no information about whether their fathers were dead or alive tended more to belong to Group C.

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[3] Genaro M. Lachica, "Factors That Influenced the Success of Disadvantaged High School Students," paper presented at the Annual Meeting of the Educational Research Association of New York State, 1968.

To determine which ability, personality and environmental factors differentiated the three groups significantly, one-way analyses of variance were performed on the continuous variables.

Group A was found to be superior on the average than Group B or C on the Numerical Ability and Abstract Reasoning Tests of the Differential Aptitude Tests, the Reading and Numerical Competence subtests of the Stanford Achievement Tests, the Quantitative Thinking subtest of the Iowa Tests of Educational Development, and ninth-year general academic average. Group A was significantly higher than Group C on the Verbal Reasoning subtest of the Differential Aptitude Tests, the English subtest of the Stanford Achievement Test and rank in class. Group B was higher than Group C only in rank in class and ninth year General Average. Groups B and C failed on the average more subjects in the ninth year than Group A.

As to personality factors, Group A students were rated higher by their counselors than those in Groups B or C on "persistence at tasks" and "cooperation and effort to please," and higher than students in Group B on "independence in decision handling." Group B was higher than Group C on "persistence at tasks."

The three groups were hardly differentiated in socio-economic factors. The only significant difference noted was in the education of the parents. Those in Group B had fathers and mothers who had more years of schooling than those in Groups A and C.

In general, students who were found to be most successful in the Program tended to be higher in both aptitude and achievement factors, to be more persistent, independent, and cooperative than those who failed to complete the Program. The most successful students were hardly distinguishable from the drop-outs in terms of environmental circumstances. The drop-outs were older on the average, and tended to be more truant and self-assertive than those who persisted in the Program. Students who stayed in the Program but were not rated as highly successful had parents who had higher educational attainments.

The term dropout has been commonly applied to students who for various reasons did not complete the high school sequence. For our purposes the term was used quite differently. Students who left the College Discovery and Development Program did not necessarily leave high school. They may have moved to another school district or transferred voluntarily into a commercial or general course of study within the same Center. Therefore, one should not view the attrition rate pessismistically. Some students may still have gone on to function successfully in a non-academic program. Table 88 gives the number and per cent of students who had left the Program some time during the tenth, eleventh, or twelfth grade of high school for a variety of reasons.

TABLE 88

Reasons for Dropping Out

Reason	N	Per Cent of Total Attrition (base 146)	Per Cent of Original Population (base 550)
Truancy	38	26.0	6.9
(Center inaccessibility)	31	21.2	5.6
Consistent academic failure	30	20.6	5.5
Change to Commercial or Vocational tracks	14	9.6	2.6
Employment (overage)	11	7.5	2.0
Discipline	10	6.9	1.8
Missing-not found	4	2.7	0.7
Left back	4	2.7	0.7
Army	2	1.4	0.4
Scholarships (private school)	2	1.4	0.4
Total of students dropping out	146	100.0	26.6

An examination of the above table shows that truancy, consistent academic failure, and discipline accounted for a total of 26.6 per cent of drop outs based on total attrition. This appears to be wry evidence of the extremely difficult nature of the population with which the Program has to deal. In spite of the supportive intervention that the Program provides, a still major proportion of CDD I students failed to discover college for themselves.

The second major reason cited for dropping out of the Program was inaccessibility of the Centers. This was proof of the high degree of mobility among the students' families and the failure of the Program to provide adequate assistance to students who might have needed stipends for transportation from their remote residences to CDD Centers.

(Additional statistical data on graduates and dropouts are contained in Appendix D, p.128).

CHAPTER VII

Report on Guidance Services*

1967-1968

In June 1968 the first class graduated from the College Discovery and Development Program after three years of intensive instruction and guidance. Three classes totalling 1050 were registered in the Program. The ethnic classification of all the students in the three classes were as follows: 46 per cent Blacks, 22 per cent Puerto Ricans, 2 per cent Asians, 30 per cent Others.

The Program continued to function in Development Centers in the same five high schools in which it started in 1965. The schools are:

Jamaica High School - Queens
Port Richmond High School - Staten Island
Seward Park High School - Manhattan
Theodore Roosevelt High School - Bronx
Thomas Jefferson High School - Brooklyn

The structure and procedures of the Program remained the same as in previous years. The students continued to receive a great deal of individual attention. They were enrolled in small classes with double periods in basic subjects and they received intensive guidance as a result of the small case load of the counselors. Cases requiring specialized help were referred to clinics, hospitals and other agencies. Unfortunately, the budget does not provide clinical help for the Centers on a part time basis.

Some interesting developments occurred during the past year in group activities in the schools. One of the college consultants in guidance and counseling, with the help of the guidance counselors developed a splendid group counseling program in two of the schools. At the weekly sessions problems of immediate concern to the students and their families were discussed as well as topics of current interest, such as the Vietnam War, race relations, school discipline and drug addiction. Judging by reports from the students, they found the sessions invaluable in helping them with some of their difficulties and in bringing them closer to their classmates with similar problems. In evaluating the Program at the end of the year the college consultant stated that the counselors and teachers of these students reported that, "They were more cohesive as class members, more friendly, and more helpful to each other than those in comparable classes, and they also found a noticeable improvement in the academic performance of some of the students."[1] Copies of this consultant's report on the group counseling sessions were distributed to all the guidance personnel when he addressed them at one of their monthly meetings.

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*The report which follows, on guidance services in the College Discovery and Development Program was prepared by Florence C. Myers, Project Coordinator for the Board of Education.

In another school a college consultant in guidance met some of the non-conforming students in group sessions on a regularly scheduled basis. Also helping with these sessions were the guidance supervisor, the counselors, and a psychiatrist and social worker from the Bureau of Child Guidance. The parents of some of the students accepted an invitation to meet weekly with the counselors and some of the specialists in order to discuss the problems of their children. This was the first time that these parents were involved in regular weekly meetings concerning their children.

In all the schools group sessions were conducted by the counselors to help orient the students and their parents to the College Discovery and Development Program and the school. There were also group guidance meetings arranged to acquaint the students with the various types of post-high school educational opportunities to which they could look forward. They learned about the different kinds of colleges (four-year and two-year colleges), and the many degree granting institutions of the City University. They found out about the costs of going to college, and how to finance a college education. They discovered the factors that determine admission to college. They learned about the tests of the College Entrance Examination Board and how to apply for them.

Guest speakers from the colleges and graduates of the students' own schools attending college furnished helpful information about the problems and challenges they would face in college, and the help they could expect. Students viewed films about various colleges and they visited four-year and two-year colleges both in groups and individually.

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[1] Genaro Marin, The Implementation and Development of a Group Approach with College Discovery and Development Students. Report No. 68-9 Office of Research and Evaluation, City University of New York, 1968.

The counselors referred the students to organizations that afford help with college plans. Some of the pupils went to ASPIRA which aids Puerto Rican students. Others went to the National Scholarship Service and Fund for Negro Students and still others had their plans reviewed by the Cooperative Program for Educational Opportunity. All these organizations were supportive and in some instances they facilitated the student's admission to college.

The counselors themselves gave a tremendous amount of time to individual students, counseling them about their college plans and college life, helping them fill out applications for admission and applications for scholarships. They also assisted many of the parents in filling out the College Scholarship Service Applications which many colleges require of scholarship applicants. All the admissions applications, which the counselors sent to the colleges, were accompanied by a short statement describing the College Discovery Program. In addition, the counselors wrote supportive letters to the colleges about many of the applicants.

Parents were involved in the Program through group meetings, individual conferences with the counselors and also through participation in activities connected with the Program. In one school with a large percentage of Spanish speaking parents, notices were sent out in Spanish as well as in English and a bilingual teacher served as an interpreter at the parents' meetings. All the schools reported that the parents were very much interested in the Program. This is evident from their response to letters and notices sent out by the schools, and their attendance in large numbers at the meetings arranged for them.

The cultural program continued for the students and took them to the theater, concerts, the ballet, visits to college campuses and other places of interest but the program in most schools was not as extensive as in former years. This was due to financial difficulties.

In the fall of 1967 the weekly stipend of $5.00 that each student received from funds provided by the Office of Economic Opportunity was eliminated by the New York City Council Against Poverty. This was a real hardship on the students. They needed the money for extra school expenses and for additional carfare since they travelled to the College Discovery school in their borough instead of to their neighborhood school. As a result of the loss of the stipends many students found it necessary to work after school and this curtailed their time for study. Other students had to transfer to non-College Discovery schools nearer their homes.

At the close of the school year despite the loss of considerable number of students because of the cessation of the stipends, the holding power of the program was 78 per cent of the 1336 originally registered.

During the third year of the Program many students continued to participate in the life of the school and also in community affairs. Some of them were active in the Student Government Organization; this past year in one school with a register of four thousand, a College Discovery pupil was elected President of the General Organization. The schools reported that the College Discovery pupils were well represented in their bands, orchestras, clubs, sports and in dramatic productions. In two schools four College Discovery students had leads in the annual school plays. Three students were performers in "Broadway in the Streets," a dramatic program sponsored by the Mayor for his work in special neighborhoods. This Program was featured in a story published by the New York Times. Several pupils participated in radio programs and spoke with appreciation of what the project had meant to them. The memorial service for Dr. Martin Luther King in one of the schools was arranged by a Committee of College Discovery Students.

One of the most gratifying results of the Program was the interest of so many of the students in reading the paperback books that were made available to them. Before graduation some of them reported with pride that they had started their own libraries of paperbacks.

Students in several of the schools continued to publish their poetry and essays in attractively illustrated, mimeographed bulletins that revealed their ability to relate with considerable literary skill some of their poignant and often inspiring memories and experiences.

One school reported that a class in history composed of College Discovery students was used for demonstration purposes at a meeting of social studies teachers addressed by Professor Edwin O. Reischauer of Harvard University. The students showed such spirit and aplomb they were warmly applauded for their efforts, and a letter commending them was sent to their principal by the teacher who conducted the lesson.

Every summer since 1965 some of the students in the project participated in an eight-week "in-residence" program at Columbia University, sponsored by the Columbia Citizenship Program and the Board of Education. It was largely financed by the Office of Economic Opportunity as an Upward Bound Project. Instruction in customary high school subjects was given at Columbia University by licensed high school teachers and enrichment courses were taught by college professors. During the summer of 1968 another group of students attended a summer program at the Farmingdale Institute in Farmingdale, Long Island. Many students have won scholarships for summer study to some of the well known colleges and preparatory schools. Other students, not enrolled in campus programs, have attended regular summer high schools in New York City.

The Director of the Bureau of Educational and Vocational Guidance has made several members of the supervisory staff of the Bureau available to the Program. The guidance supervisors of the districts in which the schools were located have been very helpful to the counselors offering them suggestions, assisting them with difficult cases and aiding them with group counseling. All this service has been rendered in addition to their supervisory functions for their particular districts. The Assistant Director of the Bureau, assigned to the high schools, has also given a great deal of time to the Program in spite of her other responsibilities. She kept in touch with the guidance supervisors and participated in all the monthly conferences of the administrative and guidance personnel. The evaluative reports of the guidance supervisors commended the counselors for their devoted, "over and beyond" efforts on behalf of the students. The counselors, in turn, have been most appreciative of the support they have received from the supervisory personnel of the Bureau of Educational and Vocational Guidance.

The monthly conferences of the administrative and guidance personnel scheduled by the project coordinator enabled the counselors to hear many guest speakers from different types of colleges, and also to exchange views on college admissions procedures and plans for the students. At these conferences the Coordinator of College Guidance Scholarships of New York City gave the counselors valuable information about trends in college admissions and afforded them training in preparing applications for admission to college and in writing meaningful assessments of the pupils.

In an effort to afford the units of the City University that had admitted our students, essential information about the College Discovery and Development Program, the University Director of Admissions, arranged a meeting for the school counselors and the guidance personnel from those units who would be working with our students in the fall of 1968. The program included a panel discussion by the school counselors on various aspects of the College Discovery Program, general discussion and group meetings that enabled the school counselors to confer with the college guidance representatives. Even though some of the college representatives present were not subsequently assigned to work with the students when they entered college, it was generally felt that this conference was an important step that would aid in facilitating the adjustment of many of the College Discovery students to the various units of the City University.

The first class consisting of 355 students graduated from the Program in June and August 1968 and 49 are still in school preparing for graduation at a later date. These two groups, the 355 graduates and the 49 continuing on register total 404, which represents 73 per cent of the group of 550 students originally admitted to the Program.

This retention rate would undoubtedly be higher but for those who had to transfer to the non-College Discovery school nearer their homes when the weekly stipend that afforded them extra carfare and money for other expenses were eliminated. Others left the Program because their families moved out of the state and still others dropped out because of academic failure and their desire to obtain jobs.

As we review the progress made by the first graduating class of 355 boys and girls we can see from their academic achievement and the admission of nearly all of them to college, that the ideas and objectives that gave birth to the Program in 1965 have been tested and have produced positive results.

It is interesting to note that 65 per cent of the group earned Academic Diplomas which meant that they had passed the required New York State Regents Examinations in certain subjects. Although there had been some criticism of the examinations the students had to take on the grounds that they were a restrictive influence on the Program, the success of such a large percentage of the students in meeting the requirements was a source of pride both to them and their teachers.

An accomplishment not anticipated three years ago when the group entered the Program is that 264 of the graduates (74 per cent) will be attending four-year or two-year degree granting institutions of the City University. Seventy-two students (20 per cent) will be attending four-year private colleges and four-year colleges of the State University of New York. All the young people admitted to the private colleges and to the divisions of the State University received substantial scholarships some of which were highly competitive. A total of 336 students (95 per cent of graduates) have been accepted to college. Sixteen students (4 per cent) will be in Urban Centers, non-degree granting institutions that provide job training, and preparation for admission to community colleges. Six students (2 per cent) will enter jobs or will be in the Armed Forces.

All these graduates will be followed up to ascertain the extent to which they are maintaining themselves and also to afford them support and assistance.

The results to date reveal certain basic strengths in the Program.

1. It has helped numbers of young people in many ways and given them hope and confidence.
2. It has sent to college youngsters who might have been drop-outs and never have continued their education.
3. It has demonstrated that a large Urban University and a Board of Education of a large school system can collaborate and produce significant results.

4. Research which is being conducted by the City University on various aspects of the education of the disadvantaged should prove helpful to similar projects.

The results are gratifying because three years ago when the Program started, the possibility of graduation for many of the students seemed very remote. Furthermore there was serious overcrowding in the schools as a result of the transfer of large numbers of ninth-year students to the senior high schools. This limited the space available for all school activities and services including counseling. The modernization of several of the schools further limited school space. In addition during the three year period 1965-1968 there were changes in some of the key personnel involved in the Program at both the university and high school levels. Although these changes were a real loss, the Program has continued and prospered under the direction of the new as well as the continuing staff members.

The Program has been commended by Dr. Irving Ratchick, Coordinator, Title I ESEA, New York State Department of Education. In describing the project at a conference of the Big Twelve School Districts in New York on April 19, 1968 he said, "This Program has been considered eminently successful."

Furthermore, the Program has received national recognition from the United States Department of Health, Education and Welfare. Included in a publication of the department entitled, "Profiles in Quality Education (1968)," the Programs described are cited as "outstanding Title I ESEA projects from across the nation."

Even though the Program is considered successful, several members of the staff at both the City University and the Board of Education think that it could be improved. They have submitted the following suggestions concerning it:

1. Time should be provided to enable the teachers to meet with one another and also with the college consultants.

2. More time should be afforded the college consultants to work in the schools or more consultants should be provided.
3. Clinicians should be assigned to the Program on at least a part time basis to work with students with emotional problems.
4. The weekly stipends, which the students had for the first two years that they were in the Program, should be restored.
5. The college tutors assigned to the Program should be screened more carefully. Time should be provided for their orientation to the Program and for briefing them regarding the academic help they are to give the students.[2]

FLORENCE C. MYERS
Project Coordinator

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[2] A report on the Tutorial Program has been prepared by Miss Mildred Kaye and published by the Office of Research and Evaluation of the City University of New York, 1968.

CHAPTER VIII

College Consultants*

1967-1968

The City University, as part of its commitment to the College Discovery and Development Program, continued to provide the equivalent of six positions. This enabled fifteen faculty members of the City University of New York to devote part of their time to serving as consultants in English, foreign languages, guidance, mathematics, science, and social studies.

The following professors served as consultants in 1967-1968:

English:

Ruth Adams - City College

Florence B. Freedman - Hunter College. (On leave after November 15, 1967)

Abraham Bernstein - Brooklyn College (Fall)

Anthony Mangione - Queens College

Foreign Languages:

Dora Bashour - Hunter College

Guidance:

Jean Gilbert - Brooklyn College

Genaro Marin - City University

H. Karl Springob - City College

Mathematics:

Linda Allegri - Hunter College

Research:

Genaro Lachica - City University

Science:

William F. Goins - Brooklyn College

Archie Lacey - Lehman College

Harold S. Spielman - City College

Social Studies:

Martin Feldman - Queens College

Philip Freedman - Lehman College

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*The following report on college consultants was prepared by Florence B. Freedman.

suggested and provided new materials, and worked on special projects.

Student Evaluation

Professor Ruth Adams (English) who had administered and reported on the Myklebust Picture Story Language Test, returned the students' test papers to their teachers in each Center. Since all tenth graders had been tested, the papers were of interest to present tenth grade teachers (for general evaluations against national norms) and to present eleventh grade teachers for the evaluation and diagnosis of each paper, since these students were now in their classes.

Work with Teachers

In addition to classroom visits followed by conferences with teachers, the following special activities took place:

1. Professor Dora Bashour (Foreign Languages) arranged for CDD guidance counselors to be invited to attend a special session of the Northeast Conference on the Teaching of Foreign Languages at which language specialists discussed with counselors the selection and guidance of students in foreign language classes.
2. Professors Martin Feldman and Philip Freedman (Social Studies) arranged a conference for all CDD teachers of social studies and their chairmen to discuss various aspects of the CDD Program in social studies. An exhibit of books and other curriculum materials was held as part of the conference.

Work with Students

Professor Archie Lacey (Science) met with seniors at the Centers (all the seniors at one Center and selected seniors at others). He conducted conversations and group and individual interviews in an effort to discover their goals and attitudes. His findings will be presented in a report.

Work with Tutors

Professor Linda Allegri (Mathematics) visited tutoring sessions at the Centers and saw the need for helping tutors. She suggested remedial techniques as well as texts and other materials which could improve their proficiency as tutors of mathematics.

Professor William F. Goins, Jr. (Science) observed tutoring sessions in order to help guidance counselors and coordinators to evaluate the proficiency of tutors in science in both subject matter and tutoring procedures.

Curriculum

Professor Martin Feldman (Social Studies) continued to work with Mr. Robert Shain, chairman of social studies at Thomas Jefferson High School, in conducting the experimental program in World History which they had planned last year. Six classes (three experimental and three control) studied world history using a topical approach with a variety of materials, including paperbacks of fiction and nonfiction.

CDD Evaluation

Professor Dora Bashour (Foreign Languages) composed and distributed a questionnaire to all CDD foreign language teachers in order to find out their opinions, attitudes, and feelings about the Program, as well as their suggestions for its improvement.

The results were compiled and distributed to CDD personnel and to the teachers, thus providing an interchange of views and the basis of future action.

Professor Florence Freedman (Coordinator of College Consultants) prepared and distributed a questionnaire to college consultants for their evaluation of their contribution to the Program and for their recommendations. The answers to the questionnaire are the basis of this report.

RECOMMENDATIONS

About Consultants

There is need for clarification of role of consultant to chairmen, teachers, and even--some say--to consultants.

There is need either of greater time allotment in some areas or for the assignment of more consultants, so that more frequent visits can be paid to each school.

About Tutors

CDD staff and consultants should arrange a conference for the orientation and training of tutors.

College consultants should observe and assist in tutoring sessions whenever possible.

About Teachers

Only those teachers should be assigned to the program who want to be in it. (There are enough enthusiastic teachers so that reluctant participants need not be drafted.)

Teachers experienced in the program and enthusiastic about it should be retained in it. (At times programming exigencies have caused undesirable--and undesired--transfers from the program.)

CDD teachers should be given an extra time allowance to permit conferences with consultants, tutors, coordinators, guidance counselors and colleagues in the program.

CHAPTER IX

SUMMARY

In its third year the College Discovery and Development Program continued to pursue its original goals: to identify underachieving disadvantaged youngsters with college potential; to increase their motivation for academic success; to improve their scholastic achievement; to develop their acceptance of college study as a realistic expectation for themselves; and to lead to their ultimate college success.

The admission of 291 new tenth grade students to constitute the third population of the Program and the loss of 45 and 29 students from the first and second populations, respectively, were the only major changes in student personnel.

In selecting the third group of College Discovery students, the same guidelines were followed as in the preceding year. However, the limitations of support to previous levels by certain funding agencies, necessitated limiting the new class to 300. Except for this decrease in number of new entrants there were no consequential differences between this third class and the previously enrolled populations.

Certain staff changes also occurred during this third year. These included the appointment of an assistant director, a new assistant to the director to replace one who returned to full time doctoral study and several research assistants. There were also a number of teachers assigned to College Discovery Classes who had not previously taught in the Program.

Data on socio-economic background, aptitude and achievement were collected and analyzed as in previous years. The characteristics of the third population were described in this report and comparisons were made between the CDD III and Control III groups on aptitude. Attendance and academic achievement were then analyzed for each class to determine whether there were essential differences among the five Development Centers. Comparisons were also made between the CDD and

Control groups on performance measures. The relative academic progress in the Program of Class I and Class II after three and two years respectively was determined by examining the trends in general academic averages.

Characteristics of CDD III at Intake

For this third year of the Program an increased proportion of females was selected resulting in a more even distribution of males and females in CDD III than in previous classes. There was also an increase in the percentage of Negro students selected and a maintenance of the proportion of Puerto Rican students.

Families of CDD III students were found to be paying significantly higher rent for their living quarters than were families of the two preceding classes but in general there were no other significant differences in socio-economic status among the three entering classes.

CDD III: Aptitude and Previous Achievement

The third group of students who entered the Program as tenth graders was, in terms of aptitude and achievement, similar to the first two entering populations. Again the students selected were those who scored high on the standardized tests of achievement and aptitude but whose general academic averages were far below those required for college admission. While in the ninth grade the students of Class III had scored one grade above the national norm on the various achievement measures. These students scored at about the 60th percentile on the aptitude measures administered to them after admission to the Program, however, the mean mid-year general average in the ninth grade was 75. This general pattern was reflected in each of the five Development Centers as evidenced by the absence of differences among Centers on both ability and achievement measures.

The Summer Program

CDD II and CDD III students who had attended the Summer Program at Columbia University under the Upward Bound Program were re-invited for a third summer. In addition, some CDD III students were also invited for their first summer. Comparison of the achievement of the students in the summer program at Columbia against those who had some other summer compensatory experience showed no appreciable differences in performance in favor of the Upward Bound student. Although gains may have been achieved by the Upward Bound students these were not reflected in improvement in school grades.

Achievement and Attendance

In the Fall term of the 1968-69 school year both CDD I and CDD II obtained lower means for general average than their counterparts in the Academic Program. CDD III, however, had a slightly higher mean than Control III. Only CDD III showed a significantly better attendance record for the fall semester than its corresponding Control group.

In the Spring term CDD I had significantly lower means than Control I for general average and for Regents examination scores in English, foreign language, and science. CDD II had lower means for general average and the Regents examination scores in language and mathematics. CDD III's performance as revealed by their general averages was comparable to that of Control III. However, CDD III's performance on the language, mathematics and science Regents failed to come up to the level of performance of Control III. While CDD II had a higher rate of absenteeism for the total school year than Control II, CDD III showed a better attendance record than Control III.

In terms of achievement for Fall 1968, there was significant variation among Centers for CDD III but not for CDD I and CDD II. However, the pattern was reversed when Spring 1969 achievement was analyzed; significant variation was found among Centers for CDD I and CDD II but not for CDD III. For all three classes there was significant inter-Center variability in rate of absenteeism.

A decreasing trend in mean general average over six terms was observed in the analysis of general averages for CDD I. The performance of CDD II over four semesters also showed this decreasing trend. Similar analysis of general averages for the Control groups shows stability in academic performance in the case of Control II and no discernible upward or downward trend in the case of Control I.

Guidance Services

Although the guidance and personnel services aspect of the Program remained structurally the same, several new features were introduced and areas were reinforced. One of the college consultants in guidance successfully developed splendid group counseling programs in two Centers. In another school, a consultant worked with non-conforming students with positive results. Increased parent involvement was seen in all the Centers. Group guidance meetings were held in the schools to discuss post-high school educational and career plans. Outside speakers were invited to speak to both students and guidance personnel. Several members of the supervisory staff of the Bureau of Educational and Vocational Guidance have been most helpful in the suggestions and assistance they have extended to the CDD guidance counselors.

College Consultants

The City University continued to provide college consultant services to the Program. In addition to the usual conferences with teachers and department heads, attendance at special conferences were arranged for foreign language, science and social studies teachers. A consultant met directly with seniors to discover goals and attitudes. Another visited tutoring sessions and provided tutors with helpful suggestions. One counselor made observations of tutors to help counselors and coordinators to help evaluate their tutorial programs. Questionnaires were sent out to teachers of a certain curricular area to get their feelings about the Program as well as suggestions for improvement.

Graduation and College Acceptance

The College Discovery and Development Program reached its first major landmark at the end of this third program year; its first students completed their high school studies and moved on to higher education. Of the 550 students who enrolled in the tenth grade in September 1965, 328 were graduated from high school on schedule in June 1968, and an additional 27 completed twelfth grade in August 1968. A total of 146 students left the Program for all causes between September 1965 and October 1968, and 49 students of this first class are seniors expected to complete their high school studies during the fourth program year.

These high school graduates are now enrolled in higher education institutions. City University baccalaureate programs have enrolled 43 of these freshmen, and 72 graduates are enrolled in baccalaureate programs in other colleges. CUNY colleges have enrolled 173 CDD graduates in liberal arts transfer programs and 48 in Associate in Arts programs. The Urban Skills Centers are working with 16 of these graduates, largely in the College Adapter Program.

In summary the students of Class I have succeeded in substantially reversing the 1965 prognosis that they would probably drop out without intervention by the College Discovery and Development Program.

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APPENDIX A

Differences Between Centers in

Age in Months: CDD III

Center		I	III	V	II	IV
	Mean	187.87	185.75	184.70	184.13	182.98
I	187.87		2.12	3.17*	3.74**	4.89**
III	185.75			1.05	1.62	2.77*
V	184.70				.57	1.72
II	184.13					1.15
IV	182.98					

Differences Between Centers in

Monthly Rent: CDD III

Center		IV	V	I	II	III
	Mean	111.04	91.72	85.23	82.14	68.69
IV	111.04		19.32**	25.81**	28.90**	42.35**
V	91.72			6.49	9.58	23.03**
I	85.23				3.09	16.54**
II	82.14					13.45*
III	68.69					

**significant at the .01 level
*significant at the .05 level

Differences Between Centers in

Total Weekly Income: CDD III

Center		IV	V	II	I	III
	Mean	113.28	105.06	95.16	92.20	89.87
IV	113.28		8.22	18.17**	21.08**	23.41**
V	105.06			9.90	12.86*	15.19*
II	95.16				2.96	5.29
I	92.20					2.33
III	89.87					

Differences Between Centers in

Years at Present Address: CDD III

Center		IV	V	III	II	I
	Mean	10.35	8.62	8.42	7.49	5.07
IV	10.35		1.73	1.93	2.86	5.28**
V	8.62			.20	1.13	3.55*
III	8.42				.93	3.35*
II	7.49					2.42
I	5.07					

Differences Between Centers in

Adjusted Life Chance Scale Score: CDD III

Center		V	IV	III	II	I
	Mean	4.53	3.35	2.96	2.79	2.74
V	4.53		1.18**	1.57**	1.74**	1.79**
IV	3.35			.39	.56	.61*
III	2.96				.17	.22
II	2.79					.05
I	2.74					

Differences Between Classes in

Monthly Rent

Class		III	II	I
	Mean	87.19	83.76	78.24
III	87.19		3.43	8.95**
II	83.76			5.52**
I	78.24			

Differences Between Classes in Rooms in Apartment

Class		III	I	II
	Mean	5.19	5.17	4.59
III	5.19		.02	.60*
I	5.17			.58**
II	4.59			

Differences Between Classes in Years at Present Address

Class		III	II	I
	Mean	7.99	6.96	6.51
III	7.99		1.03*	1.48*
II	6.96			.45
I	6.51			

APPENDIX B

Differences Between Centers in
Mid-Year Ninth Grade General Average: CDD III

Center		III	V	II	I	IV
	Mean	76.76	76.16	75.72	75.09	69.62
III	76.76		.60	1.04	1.67	7.14**
V	76.16			.44	1.07	6.54**
II	75.72				.63	6.10**
I	75.09					5.47*
IV	69.62					

Differences Between Classes in
Verbal Reasoning

Class		I	II	III
	Mean	26.83	26.09	24.15
I	26.83		.74	2.68**
II	26.09			1.94**
III	24.15			

**significant at the .01 level
*significant at the .05 level

Differences Between Classes
Numerical Ability

Class		I	II	III
	Mean	20.74	19.64	19.00
I	20.74		1.10**	1.74**
II	19.64			.64
III	19.00			

Differences Between Classes
VR + NA

Class		I	II	III
	Mean	47.59	45.74	43.07
I	47.59		1.85**	4.52**
II	45.74			2.67**
III	43.07			

Differences Between Classes
Stanford Achievement Test: English

Class		I	II	III
	Mean	51.69	50.45	46.20
I	51.69		1.24	5.49**
II	50.45			4.25**
III	46.20			

Differences Between Classes

Stanford Achievement Test: Reading

Class		I	II	III
	Mean	33.46	32.80	30.64
I	33.46		.66	2.82**
II	32.80			2.16**
III	30.64			

Differences Between Classes

Ninth Grade Absences

Class		II	III	I
	Mean	6.65	5.84	5.49
II	6.65		.81	1.16**
III	5.84			.35
I	5.49			

APPENDIX C

Differences Between Centers in

Fall Absences: CDD I

Center		I	II	III	V	IV
	Mean	12.08	11.46	10.95	7.41	6.76
I	12.08		0.62	1.13	4.67**	5.32**
II	11.46			0.51	4.05**	4.70**
III	10.95				3.54*	4.19**
V	7.41					0.65
IV	6.76					

Differences Between Centers in

Fall Absences: CDD II

Center		II	III	I	V	IV
	Mean	14.58	12.87	7.82	7.11	6.75
II	14.58		1.71	6.76**	7.47**	7.83**
III	12.87			5.05**	5.76**	6.12**
I	7.82				0.71	1.07
V	7.11					0.36
IV	6.75					

**significant at the .01 level
*significant at the .05 level

Differences Between Centers in
Fall Absences: CDD III

Center		III	II	IV	I	V
	Mean	7.75	6.63	4.35	4.15	3.36
III	7.75		1.12	3.40**	3.60**	4.39**
II	6.63			2.28*	2.48*	3.27**
IV	4.35				0.20	0.99
I	4.15					0.79
V	3.36					

Differences Between Centers in
Fall General Average: CDD III

Center		II	I	III	V	IV
	Mean	77.25	75.15	74.04	71.38	70.82
II	77.25		2.10	3.21*	5.87**	6.43**
I	75.15			1.11	3.77*	4.33**
III	74.04				2.66	3.22*
V	71.38					0.56
IV	70.82					

Differences Between Centers in
Total Year Absences: CDD I

Center		II	IV	III	V	I
	Mean	18.53	18.07	17.95	12.84	9.54
II	18.53		.46	.58	5.69*	8.99**
IV	18.07			.12	5.23*	8.53**
III	17.95				5.11*	8.41**
V	12.84					3.30
I	9.54					

Differences Between Centers in
Spring General Average: CDD II

Center		IV	I	II	V	III
	Mean	74.08	71.03	67.59	67.14	66.10
IV	74.08		3.05	6.49*	6.94*	7.98**
I	71.03			3.44	3.89	4.93
II	67.59				.45	1.49
V	67.14					1.04
III	66.10					

Differences Between Centers in
Language Regents: CDD II

Center		II	IV	I	V	III
	Mean	75.81	74.81	73.72	66.60	61.64
II	75.81		1.00	2.09	9.21*	14.17**
IV	74.81			1.09	8.21*	13.17**
I	73.72				7.12	12.08
V	66.60					4.96
III	61.64					

Differences Between Centers in
Math Regents: CDD II

Center		IV	I	III	V	II
	Mean	63.98	61.50	51.08	50.47	46.60
IV	63.98		2.48	12.90*	13.51**	17.38**
I	61.50			10.42*	11.03*	14.90**
III	51.08				.61	14.48**
V	50.47					3.87
II	46.60					

Differences Between Centers in Science Regents: CDD II

Center		I	II	IV	III	V
	Mean	69.59	66.65	65.43	62.47	61.09
I	69.59		2.94	4.16	7.12*	8.50**
II	66.65			1.22	4.18	5.56*
IV	65.43				2.96	3.34
III	62.47					1.38
V	61.09					

Differences Between Centers in Spring General Average: CDD III

Center		II	I	IV	V	III
	Mean	74.38	73.47	68.91	68.61	67.47
II	74.38		.91	5.47*	5.77*	6.91**
I	73.47			4.56	4.86*	6.00**
IV	68.91				.30	1.44
V	68.61					1.14
III	67.47					

Differences Between Centers in
Language Regents: CDD III

Center		I	II	IV	III	V
	Mean	77.96	69.62	68.76	59.87	58.31
I	77.96		8.34	9.20	18.09**	19.65**
II	69.62			.86	9.75*	11.31
IV	68.76				8.89	10.45
III	59.87					1.56
V	58.31					

Differences Between Centers in
Math Regents: CDD III

Center		I	IV	II	III	V
	Mean	60.84	58.70	57.38	52.09	43.56
I	60.84		2.14	3.46	8.75	17.28**
IV	58.70			1.32	6.61	15.14**
II	57.38				5.29	13.82**
III	52.09					8.53
V	43.56					

Differences Between Centers in
Science Regents: CDD III

Center		IV	I	II	III	V
	Mean	69.65	67.55	63.65	61.05	59.92
IV	69.65		2.10	6.00*	8.60**	9.73**
I	67.55			3.90	6.50*	7.63**
II	63.65				2.60	3.73
III	61.05					1.13
V	59.92					

Differences Between Centers in
Total Year Absences: CDD III

Center		III	II	V	IV	I
	Mean	19.66	18.53	12.84	9.72	9.54
III	19.66		1.13	6.82**	9.94**	10.12**
II	18.53			5.69*	8.81**	8.99**
V	12.84				3.12	3.30
IV	9.72					.18
I	9.54					

APPENDIX D

SEX

OBSERVED AND EXPECTED FREQUENCIES

	A	B	C	All Groups
Boys	90 (101.6)	113 (111.7)	85 (74.7)	288
Girls	80 (68.4)	74 (75.3)	40 (50.3)	194
Both Sexes	170	187	125	482

$X^2 = 7.197$
$P = <.01$

FATHER'S EMPLOYMENT STATUS
OBSERVED AND EXPECTED FREQUENCIES

	A	B	C	All Groups
Employed	111 (103.0)	124 (113.3)	57 (75.7)	292
Not Employed or No Information	59 (67.0)	63 (73.7)	68 (49.3)	190
Both Categories	170	187	125	482

$X^2 = 15.853$
$P = <.01$

INTACTNESS OF FAMILY
OBSERVED AND EXPECTED FREQUENCIES

	A	B	C	All Groups
Both Parents Alive & Living Together	103 (96.8)	113 (103.2)	52 (68.0)	268
Other	65 (71.2)	66 (75.8)	66 (50.0)	197
Both Categories	168	179	118	465

$X^2 = 12.019$
$P = <.01$

FATHER'S PLACE OF BIRTH
OBSERVED AND EXPECTED FREQUENCIES

	A	B	C	All Groups
U.S. North	43 (47.8)	56 (50.8)	35 (35.4)	134
U.S. South	29 (35.3)	44 (37.5)	26 (26.2)	99
Puerto Rico	44 (30.7)	21 (32.6)	21 (22.7)	86
Other	15 (17.1)	18 (18.2)	15 (12.7)	48
All Regions	131	139	97	367

$X^2 = 13.964$
$P = <.05$

MOTHER'S BIRTHPLACE
OBSERVED AND EXPECTED FREQUENCIES

	A	B	C	All Groups
U.S. North	51 (59.4)	70 (62.2)	42 (41.4)	163
U.S. South	38 (43.7)	53 (45.7)	29 (30.5)	120
Puerto Rico	45 (32.1)	21 (33.6)	22 (22.4)	88
Other	15 (13.8)	12 (14.5)	11 (9.7)	38
All Regions	149	156	104	409

$X^2 = 14.792$
$P = <.05$

TYPE OF HIGH SCHOOL PROGRAM
OBSERVED AND EXPECTED FREQUENCIES

	A	B	C	All Groups
Higher Horizons and/or Special Services	70 (74.4)	68 (81.8)	72 (53.8)	210
Other	100 (95.6)	119 (105.2)	51 (69.2)	270
All Categories	160	187	123	480

$X^2 = 15.699$
$P = <.01$

FATHER LIVING OR DECEASED

OBSERVED AND EXPECTED FREQUENCIES

	A	B	C	All Groups
No Information	10 (16.3)	18 (19.0)	20 (12.7)	48
Deceased	20 (15.2)	9 (17.8)	16 (11.9)	45
Living	130 (128.5)	160 (150.2)	89 (100.4)	379
All Categories	160	187	125	472

X^2 = 15.699

P = <.01

VALUES OF F OBTAINED IN ANALYSIS OF VARIANCE TO COMPARE MEANS

Variable	F	df	P
1. DAT: Verbal Reasoning	4.009	2/455	<.05
2. DAT: Numerical Ability	28.424	2/458	<.01
3. DAT: Abstract Reasoning	8.640	2/458	<.01
4. SAT: Reading	5.287	2/437	<.01
5. SAT: English	8.473	2/440	<.01
6. SAT: Numerical Competence	25.368	2/444	<.01
7. Metropolitan Reading Grade Equivalent	1.703	2/393	>.05
8. ITED: Social Studies Reading	1.740	2/424	>.05
9. ITED: Composite Score	2.689	2/424	>.05
10. ITED: Quantitative Thinking	4.490	2/424	<.05
11. 9th Year General Average	72.166	2/472	<.01
12. Number of Subjects Failed	17.026	2/474	<.01
13. Rank in Class	8.348	2/467	<.01
Non-Intellective Measures			
1. Age in Months	3.267	2/478	<.05
2. Days Absent	14.505	2/457	<.01
3. Number of Organizations	.945	2/474	>.05
4. Persistence at Tasks	15.227	2/406	<.01
5. Assertion of Rights and Presence	5.563	2/406	<.01
6. Independence in Decision Handling	3.331	2/404	<.05
7. Group Leadership	1.781	2/406	>.05
8. Cooperation and Effort to Please	17.041	2/401	<.01
9. Creativity and Originality	1.087	2/406	>.05
Environmental Factors			
1. Education of Father	4.743	2/395	<.01
2. Education of Mother	5.829	2/439	<.01
3. Number of Years at Present Address	.238	2/470	>.05
4. Weekly Family Income	.839	2/435	>.05
5. Monthly Rent (apartment)	.461	2/426	>.05
6. Number of Persons in Family	2.369	2/471	>.05

Means for all Variables

Variable	Means A	Means B	Means C
Ability Measures			
1. DAT: Verbal Reasoning	28.26*	26.82	25.68
2. DAT: Numerical Ability	23.86**	19.98	19.23
3. DAT: Abstract Reasoning	35.76**	33.43	32.69
4. SAT: Reading	35.10**	33.19	32.05
5. SAT: English	54.49*	51.15	49.58
6. SAT: Numerical Competence	27.99**	25.60	24.37
7. Metropolitan Reading Grade Equivalent	10.27	9.84	10.13
8. ITED: Social Studies	64.79	60.21	58.29
9. ITED: Composite Score	67.76	64.83	63.53
10. ITED: Quantitative Thinking	64.51**	58.43	57.32
11. 9th Year General Average	80.95**	74.18*	71.45
12. Number of Subjects Failed	0.22	0.70*	0.82*
13. Rank in Class (Negative)	1.43*	1.56*	2.07
Non-Intellective Measures			
1. Age in Months	183.84	183.54	185.60**
2. Days Absent	3.52	5.48*	7.88**
3. Number of Organizations	1.28	1.40	1.20
4. Persistence at Tasks	3.99**	3.64*	3.26
5. Assertion of Rights and Presence	2.86	3.06	3.33*
6. Independence in Decision Handling	3.74*	3.46	3.55
7. Group Leadership	3.18	3.04	3.07
8. Cooperation and Effort to Please	4.04**	3.49	3.20
9. Creativity and Originality	3.58	3.44	3.54
Environmental Factors			
1. Education of Father	9.09	10.16**	9.30
2. Education of Mother	9.13	10.27**	9.47
3. Number of Years at Present Address	6.43	6.81	6.52
4. Weekly Family Income	99.74	100.41	94.94
5. Monthly Apartment Rent	76.99	80.13	79.05
6. Number of Persons in Family	5.36	5.51	5.01

**significantly higher than each of two other means.
*significantly higher than lowest mean.